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16. ABSTRACT

This report describes water quality in the Atchafalaya Basin in terms of geographical areas, seasonal patterns, and its relationships to water regimes and compares water quality in the Basin to water quality in other Louisiana and southeastern lakes. Emphasis in this report is given to water quality in the Atchafalaya Basin Floodway, i.e., that portion of the Atchafalaya Basin subject to frequent and prolonged natural overbank flooding and most subjected to hydrological modifications by man. The key to the high productivity of the Floodway is the short, efficient, bacteria-detritus food chain. Organic matter processed through bacterial metabolism represents the foundation of the system. Nitrogen and phosphorus levels are sufficient for bacterial metabolism of organic matter, regardless of geographical area, season, or water level. Prolonged overbank flooding, with the inundation of additional land areas containing herbaceous material and forest litter, renews the carbon resources needed to drive the bacteria-detritus system. It is recommended that to maintain the highly efficient bacteria-detritus food chain, the extent, duration, and depth of natural flooding must be maintained to the greatest degree possible.

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DESCRIPTIVE WATER QUALITY FOR THE ATCHAFALAYA BASIN, LOUISIANA

by

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OFFICE OF RESEARCH AND DEVELOPMENT
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FOREWORD

Protection of the environment requires effective regulatory actions based on sound technical and scientific information. This information must include the quantitative description and linking of pollutant sources, transport mechanisms, interactions, and resulting effects on man and his environment. Because of the complexities involved, assessment of exposure to specific pollutants in the environment requires a total systems approach that transcends the media of air, water, and land. The Environmental Monitoring Systems Laboratory--Las Vegas contributes to the formation and enhancement of a sound integrated monitoring data base through multidisciplinary multimedia programs designed to:

- develop and optimize systems and strategies for monitoring pollutants and their impact on the environment
- demonstrate new monitoring systems and technologies by applying them to fulfill special monitoring needs of the Agency's operating programs.

This report presents water quality data for the Atchafalaya Basin in terms of geographical areas, seasonal patterns, and relationship of water quality to flooding patterns. These data can be utilized to formulate plans to minimize the environmental impact of proposed hydrological modifications. This report was written for use by Federal, State, and local governmental agencies concerned with water quality analysis, monitoring and/or regulation. Private industry and individuals similarly involved with the Atchafalaya Basin will find the document useful. For further information contact the Water and Land Quality Branch, Monitoring Operations Division.

George B. Morgan

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Director
Environmental Monitoring Systems Laboratory
Las Vegas

SUMMARY

The Atchafalaya Basin in south-central Louisiana is a large alluvial basin whose wetlands are of national significance. The Basin extends inland from the Gulf of Mexico for a distance of 125 miles (200 km) to the confluence of Red River and distributary flows from the Mississippi River. To meet the need for flood control, the U.S. Army Corps of Engineers is considering hydrological modifications for the Basin. The Basin's present hydrological cycle and complex water circulation patterns support one of the world's most highly natural productive areas.

In response to a request by the Governor of Louisiana and a joint U.S. Congressional resolution, the U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USCE), and U.S. Department of the Interior (USDI), are conducting a water and land quality study in the Atchafalaya River Basin. The study's objectives are to assess the potential impact of proposed hydrological modifications and to develop alternative land and water management plans to accommodate flood flows and maintain an acceptable level of environmental quality for the Atchafalaya Basin.

Objectives of the EPA in the Atchafalaya Basin include: 1) land use requirements to control agriculturally related nonpoint sources of pollution (Federal Water Pollution Control Act Amendment (FWPCAA), 1972, Sec. 208); 2) the 1983 goal of water quality, which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water, and the restoration and maintenance of the chemical, physical, and biological integrity of the nation's water (FWPCAA, 1972, Sec. 101); 3) avoidance of degradation of waters that in their existing condition could be used for sport fishing where such degradation would reduce their value for that use; 4) reduction of the adverse impact of spoil disposal on fishery, wildlife, or recreational areas (FWPCAA, 1972, Sec. 404); 5) monitoring of the discharge of dredged material in wetlands; 6) the avoidance of long- and short-term adverse impacts associated with destruction and modification of wetlands (Exec. Order 11990); 8) the avoidance of direct or indirect support of new construction in wetlands (Exec. Order 11990); 9) the avoidance, to the extent possible, of long- and short-term adverse impacts associated with the occupancy and modification of flood plains (Exec. Order 11988); 10) the avoidance of direct or indirect support of flood plain development whenever there is a practicable alternative (Exec. Order 11988); and 11) the avoidance of discharged material that would have an unacceptable adverse effect on municipal water supplies, shellfish beds, and fishery, wildlife or recreational areas (FWPCAA, Section 404, C).

One of the major hydrological features of the Atchafalaya Basin is a system of levees and floodways designed to confine and pass a "project flood" through the Mississippi River Basin of 3,000,000 cubic feet per second (84,960 cubic meters per second). It is planned that 50 percent of the "project flood" would be diverted through the Atchafalaya Basin, making it a vital and necessary component of flood control works preventing natural disaster in lower Louisiana. Because of the system of levees, the Basin can be divided into two major areas, i.e., (1) the area totally encompassed by a system of levees, and (2) the area outside the levee system.

The upper part of the Basin is largely used for agriculture. The middle portion of the Basin within the levee system is known as the Atchafalaya Basin Floodway. It is a semi-wilderness area dominated by swamps and lakes and subject to frequent and prolonged natural overbank flooding. Emphasis was given to examining the water quality of this portion of the Basin as it is most subject to man-made hydrological modifications and is extremely productive of aquatic life. The middle portion of the Basin outside of the levee system has been isolated from historical influence of the Atchafalaya River by the levees and water level patterns are now determined exclusively by local runoff. Considerable agriculture exists in this area. The lower Basin's environment is one of fresh and brackish water marshes and bays where the development of the Atchafalaya River Delta is the most important process affecting environmental quality.

Water and biological samples were collected from 148 stations in the Atchafalaya Basin during the period 1974 to 1977. Waters in the Atchafalaya Basin are extremely rich in nutrients as compared to Louisiana lakes and eastern and southeastern lakes. However, autotrophic production in the Atchafalaya Basin is much lower than the other lakes. Much of the lower productivity can be attributed to light limitation due to mineral-induced turbidity. Areas both within and outside the levee system are extremely rich in phosphorus and nitrogen. However, the areas outside the levee system which do not experience overbank flooding support higher standing crops of phytoplankton and have higher dissolved oxygen concentrations than areas which experience overbank flooding.

Significant amounts of suspended material settle out of the water as it passes through the Atchafalaya Basin Floodway. Excessive deposition of suspended material in the Basin is environmentally detrimental and is reducing its flood-carrying capacity. The amount of suspended material passing a given point is highly correlated with the total volume of water passing that point and the deposition rates of suspended materials is a function of the amount of material in suspension, other factors being equal. Western portions of the Atchafalaya Basin Floodway receive three times the amount of water per unit area as compared to the eastern segment of the Floodway. Only minor differences in environmental parameters exist between the two segments. To help alleviate the problem of sedimentation in the western segment, it is recommended that flows per unit area be reduced to approximate those in the eastern segment of the Floodway, as long as the extent, duration, and depth of natural flooding is not greatly reduced.

Dissolved oxygen concentrations are one of the most important gauges of the Basin's water quality and its ability to support a well-balanced aquatic fauna. Depressions of dissolved oxygen levels in the Atchafalaya Basin Floodway adversely impact resident populations of aquatic life. Two separate phenomena create most of the conditions under which reduced dissolved oxygen levels exist: (1) rapid decomposition of newly inundated forest litter and herbaceous vegetation during periods of flooding and draining of backwater areas; and (2) increased biological activity associated with warm summer temperatures in combination with receding water levels. It is extremely important to maintain proper water circulation patterns in the overflow areas of the Atchafalaya Basin Floodway during high water periods to prevent large areas from having extreme DO depressions which adversely impact resident populations of aquatic life.

The key to the high productivity of the Atchafalaya Basin Floodway is the short, efficient, bacteria-detritus food chain. Organic matter processed through bacterial metabolism represents the foundation of the system. Nitrogen and phosphorus levels are sufficient for bacterial metabolism of organic matter, regardless of geographical area, season, or water level. Prolonged overbank flooding, with the inundation of additional land areas containing herbaceous material and forest litter, renews the carbon resources needed to drive the bacteria-detritus system. To maintain the highly efficient bacteria-detritus food chain, the extent, duration and depth of natural flooding must be maintained to the greatest degree possible.

As a participant in the planning process for the development of a multiuse management plan for the Atchafalaya Basin, the EPA is using the results of this study to make recommendations, enforceable through its responsibilities, to ensure that Federal environmental requirements and objectives are sufficiently considered in the selection of a final plan for management of the critical wetland area of the Atchafalaya Basin.

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LIST OF ABBREVIATIONS AND SYMBOLS

ABBREVIATIONS

EPA	United States Environmental Protection Agency
NES	USEPA's National Eutrophication Survey
STORET	USEPA's data STOrage and RETrieval system
USCE	United States Army Corps of Engineers
USDI	United States Department of the Interior

SYMBOLS

km	kilometer(s)
km^2	square kilometer(s)
m	meter
μg/l	microgram per liter
mg/l	milligram per liter
in	inch
cfs	cubic feet per second
cms	cubic meter per second
TP	total phosphorus
OP	dissolved orthophosphorus
NH_3N	ammonia-nitrogen
NO_2NO_3N	nitrite-nitrate-nitrogen
TALK	total alkalinity
TKJEL	total kjeldahl-nitrogen
TEMP	temperature
PH	pH
SECCHI	Secchi disc transparency
CHLA	chlorophyll _a_
DO	dissolved oxygen
DOSAT	percent saturation of dissolved oxygen concentration
TOC	total organic carbon
DOC	dissolved organic carbon
POC	particulate organic carbon
N-P	inorganic nitrogen to total phosphorus ratio

INTRODUCTION

The Atchafalaya Basin is a large shallow depression located in the deltaic plain of the Mississippi River in southern Louisiana. The Basin is an area of national importance which provides extensive natural resources as well as habitat for rare and endangered species. However, the Basin must also serve as a floodway to pass a "project flood" through the Mississippi River Basin of 3,000,000 cubic feet per second (cfs) (84,960 cubic meters per second (cms). It is planned that 50 percent of the "project flood" would be diverted through the Atchafalaya Basin, making it a vital and necessary component of flood control works preventing natural disasters in lower Louisiana.

In response to a request by the Governor of Louisiana and a joint U.S. Congressional resolution, the U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USCE), and U.S. Department of the Interior (USDI) are conducting a water and land quality study in the Atchafalaya Basin. The study's objectives are to assess the potential impact of proposed hydrological modifications and to develop alternative land and water management plans to accommodate flood flows and maintain an acceptable level of environmental quality for the Atchafalaya Basin.

As part of the Atchafalaya Basin Water and Land Quality Study, we analyzed water and biological samples collected from 148 stations during the period 1974 to 1977. The purpose of this report is to: 1) describe water quality in the Atchafalaya Basin in terms of geographical areas, seasonal patterns, and its relationship to water regimes; and 2) compare water quality in the Basin to water quality in other Louisiana lakes, and eastern and southeastern lakes as determined by the EPA's National Eutrophication Survey (NES). Emphasis in this report is given to water quality in the Atchafalaya Basin Floodway, i.e., that portion of the Atchafalaya Basin subject to frequent and prolonged natural overbank flooding and most subjected to hydrological modifications by man.

CONCLUSIONS

1) Because of a system of levees, the Atchafalaya Basin can be divided into two major areas, i.e., the area totally encompassed by a system of levees and the area outside the levee system. The middle portion of the Basin within the levee system is known as the Atchafalaya Basin Floodway. It is a semi-wilderness area dominated by swamp and lakes and subject to frequent and prolonged natural overbank flooding. This area is extremely productive of aquatic life and is most subject to man-made hydrological modifications.

2) Waters in the Atchafalaya Basin are extremely rich in nutrients as compared to Louisiana lakes and eastern and southeastern lakes. However, autotrophic production in the Atchafalaya Basin is much lower. Most of this lower productivity can be attributed to light limitation due to mineral-induced turbidity.

3) Areas both within and outside the levee system are extremely rich in phosphorus and nitrogen. However, the areas outside the levee system which do not experience overbank flooding support higher standing crops of phytoplankton and have higher dissolved oxygen concentrations than areas which experience overbank flooding.

4) Significant amounts of suspended material settle out of the water as it passes through the Atchafalaya Basin Floodway. Excessive deposition of suspended material in the Basin is environmentally detrimental and is reducing its flood carrying capacity.

5) The amount of suspended material passing a given point is highly correlated with the total volume of water passing that point and the deposition rate of suspended material is a function of the amount of material in suspension, other factors being equal.

6) Even though the western segment of the Atchafalaya Basin Floodway receives about three times the amount of water per unit area as the eastern segment, there are only minor differences in environmental parameters between the two areas.

7) In order to reduce the potential for sediment deposition, flows in the western segment of the Atchafalaya Basin Floodway could be reduced to approximate those in the eastern segment of the Atchafalaya Basin Floodway, without adversely affecting environmental quality.

8) Levels of chlorophyll a increase considerably in the area within the levee system during the warmer summer months. Also, during this period there is a dramatic increase in ammonia-nitrogen values due to increased bacterial action primarily associated with bottom sediments.

9) Total phosphorus, orthophosphorus, nitrite-nitrate-nitrogen, and light penetration levels are lower during low-water conditions in the Atchafalaya Basin Floodway than during high-water conditions while the reverse is true for dissolved oxygen, temperature, ammonia-nitrogen and Kjeldahl-nitrogen.

10) Dissolved oxygen concentrations are one of the most important gauges of the Atchafalaya Basin's water quality and its ability to support a well-balanced aquatic fauna. Depressions of dissolved oxygen levels in the Atchafalaya Basin Floodway adversely impact resident populations of aquatic life.

11) Two separate phenomena create most of the conditions under which reduced oxygen levels exist within the Atchafalaya Basin Floodway: (a) rapid decomposition of newly inundated forest litter and herbaceous vegetation during periods of flooding and draining of backwater areas, and (b) increased biological activity associated with warm summer temperatures in combination with receding water levels.

12) Most of the extremely low dissolved oxygen concentrations during high-water conditions in the Atchafalaya Basin Floodway occur in areas shielded from extensive wind action or with little or no water circulation due to man-made or natural obstructions.

13) Proper water circulation patterns must be provided for in the overflow areas of the Atchafalaya Basin Floodway during high water periods in order to prevent large areas from having extremely low dissolved oxygen concentrations adversely impacting resident populations of aquatic life.

14) The key to the high productivity of the Atchafalaya Basin Floodway is the short, efficient, bacteria-detritus food chain.

15) Prolonged overbank flooding in the Atchafalaya Basin Floodway, with the inundation of additional land areas containing herbaceous materials and forest litter, renews the carbon resources needed to drive the bacteria-detritus system.

16) To maintain the highly efficient bacteria-detritus food chain in the Atchafalaya Basin Floodway, the extent, duration, and depth of natural flooding must be maintained to the greatest degree possible.

RECOMMENDATIONS

1) In order to reduce the potential for sediment deposition, reduce flows per unit of area in the western segment of the Atchafalaya Basin Floodway to approximate those in the eastern segment of the Atchafalaya Basin Floodway.

2) In order to prevent large areas of the Atchafalaya Basin Floodway from having extremely low dissolved oxygen concentrations, provide proper water circulation patterns in the overflow areas during high water periods.

3) In order to provide the short, efficient bacteria-detritus food chain, upon which the high productivity of the Atchafalaya Basin Floodway is dependent, maintain to the greatest degree possible the extent, duration, and depth of natural flooding.

DESCRIPTION OF BASIN

The Atchafalaya Basin comprises a 4,662-square kilometer (km^2) lowland area confined between natural levee ridges that delineate the present and former courses of the Mississippi River (Figure 1). The overall dimensions of the Basin are approximately 72 by 193 kilometers (km) with elevation ranging from 15 meters (m) to sea level.

The natural boundaries of the Basin on the east are crests of the natural levee ridges of the Mississippi River and the LaFourche Distributory, and on the west the natural levee of the Teche Ridge. Its northern boundary is delineated by the Red River and the Old River Outlet Channel which diverts water from the Mississippi River. To the south the Basin opens into a estuarine system. The upper portion of the Basin is largely used for agriculture. Much of the middle portion of the Basin is a semi-wilderness area dominated by swamps and lakes. The lower portion of the Basin, south of the Teche Ridge is estuarine in character.

The Basin above Teche Ridge contains one of the largest remaining alluvial hardwood swamps in the United States, containing more than 1,700 km^2 of hardwoods, nearly one-third of which are cypress-tupelo swamps, and 260 km^2 of permanent water bodies. Below the Teche Ridge the Basin's environment is one of fresh and brackish water marshes and bays where the development of the Atchafalaya River Delta is the most important process affecting environmental quality.

The developing Atchafalya River Delta, below the Teche Ridge, offers the potential development of 777 km^2 of new wetlands, in a state where loss of wetlands amounts to a staggering 41 km^2 per year. The importance of the Atchafalaya River Delta development is readily realized when considering the maintenance of Louisiana's coastal renewable resources rests solely on the growth of new delta complexes to replace those being lost to subsidence and erosion. The only major physical development that now counters the slow disintegration of the entire Mississippi delta system is the growth of the Atchafalaya Delta. The estuarine environment and the fresh and brackish water marshes and bays being formed by this rare and active river delta will support extensive productive wetlands, if allowed to develop naturally.

The Atchafalaya Basin north of the Teche Ridge can be broken into six segments (Figure 2) which have integrity due to man-made levee systems. These are: (1) Morganza Floodway, (2) West Atchafalaya Floodway, (3) Pointe Coupee Sump Area, (4) Atchafalaya Basin Floodway--historically subject to frequent and prolonged natural flooding, (5) leveed Atchafalaya River and other segments located mainly between the upper Atchafalaya River Levees and Old River, and

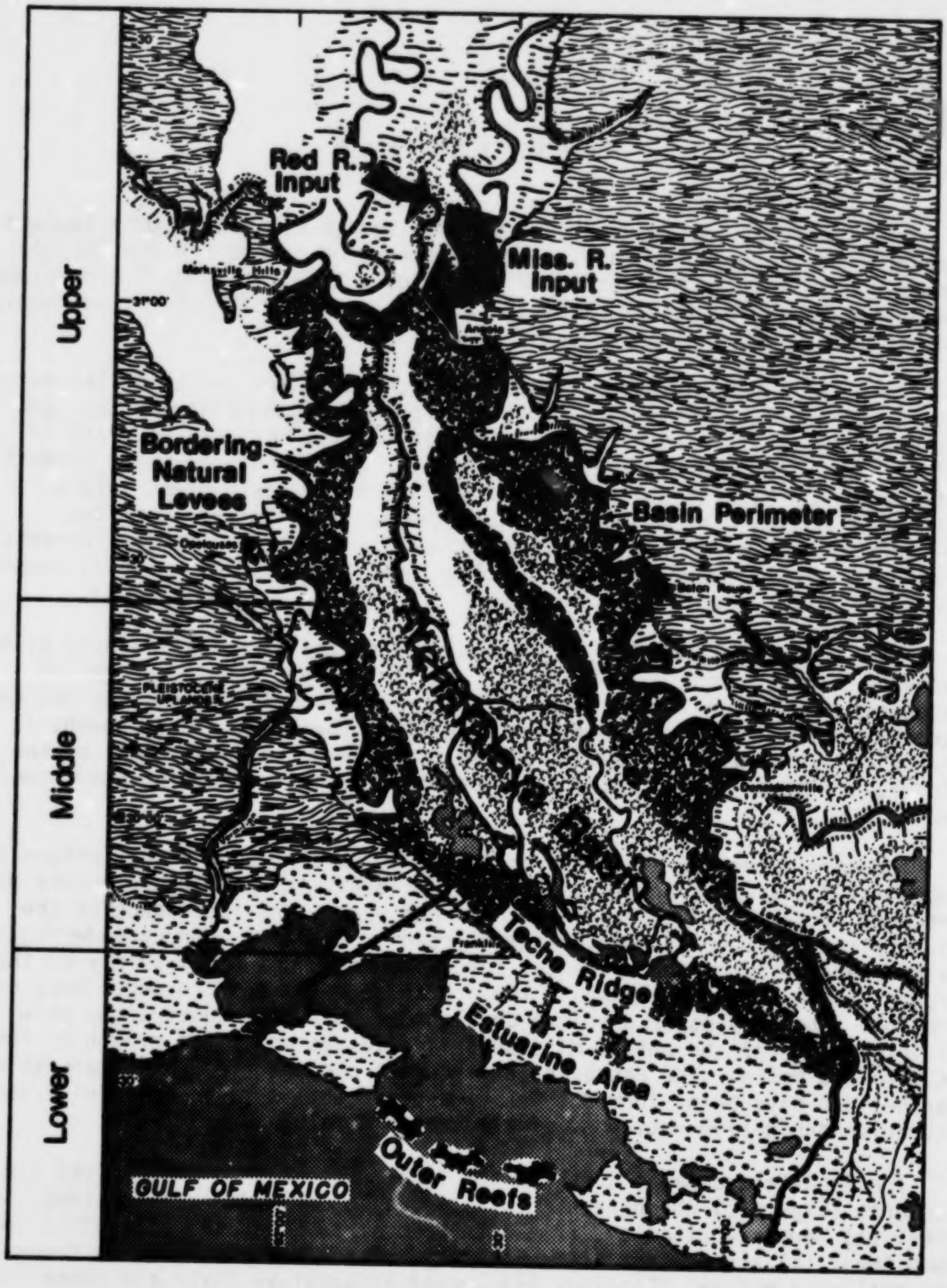


Figure 1. Boundaries and salient features of the Atchafalaya study area. Source: Gagliano and van Beek (1975).

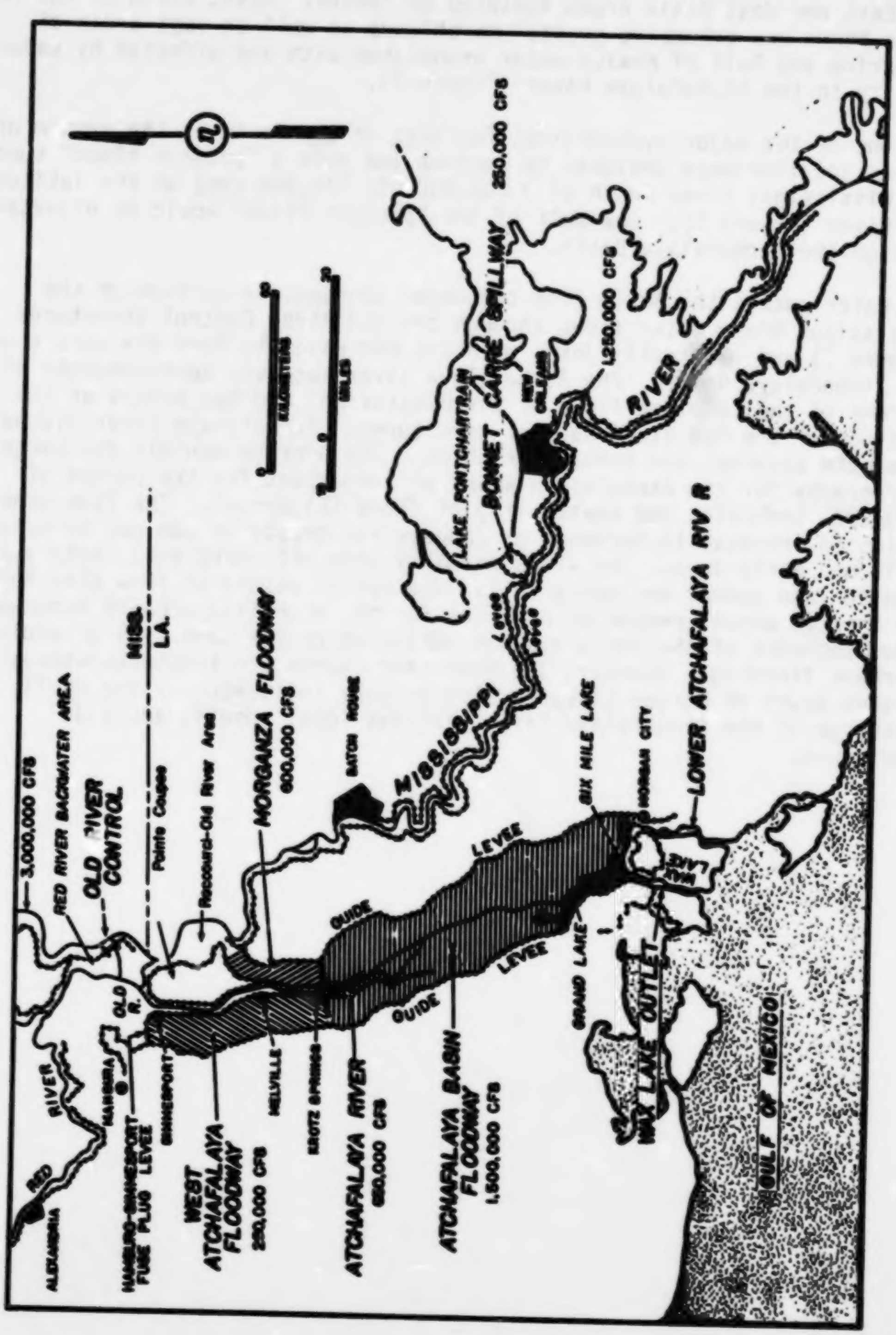


Figure 2. Segments of the Atchafalaya Basin.

(6) East and West Basin areas isolated by levees. Also, south of the Teche Ridge there are extensive coastal marshlands as well as vast areas of estuarine and Gulf of Mexico water associated with and affected by water quality in the Atchafalaya River (Figure 2).

One of the major hydrological features of the Basin is the system of levees and floodways designed to confine and pass a "project flood" through the Mississippi River Basin of 3,000,000 cfs (84,960 cms) at the latitude of Old River (Figure 3). One-half of the "project flood" would be diverted through the Atchafalaya Basin.

Water enters the Basin from two major sources. A portion of the Mississippi River water flows through the Old River Control structures (Figure 2) and eventually joins with the Red River to form the main stem of the Atchafalaya River. The Atchafalaya River receives approximately 30 percent of the combined flows of the Mississippi and Red Rivers at the latitude of the Old River Control structures. Atchafalaya River discharges show both seasonal and annual variation. The average monthly discharge hydrography for the Atchafalaya River at Simmesport for the period of 1963-1971 indicates the seasonality of flows (Figure 4). The flow generally begins to increase in December or January and crests in the period between April and early June. The flows normally drop off sharply to their seasonal lows in late summer and early fall. The cyclic nature of flow also describes the typical annual regime of overflow for the Atchafalaya Basin Floodway. The other segments of the Basin are not subjected to the same type of prolonged overbank flooding. However, the extensive swamps and freshwater-to-saline marshes south of Morgan City are also greatly influenced by the cyclic discharge of the Atchafalaya River, besides local runoff, and tidal conditions.

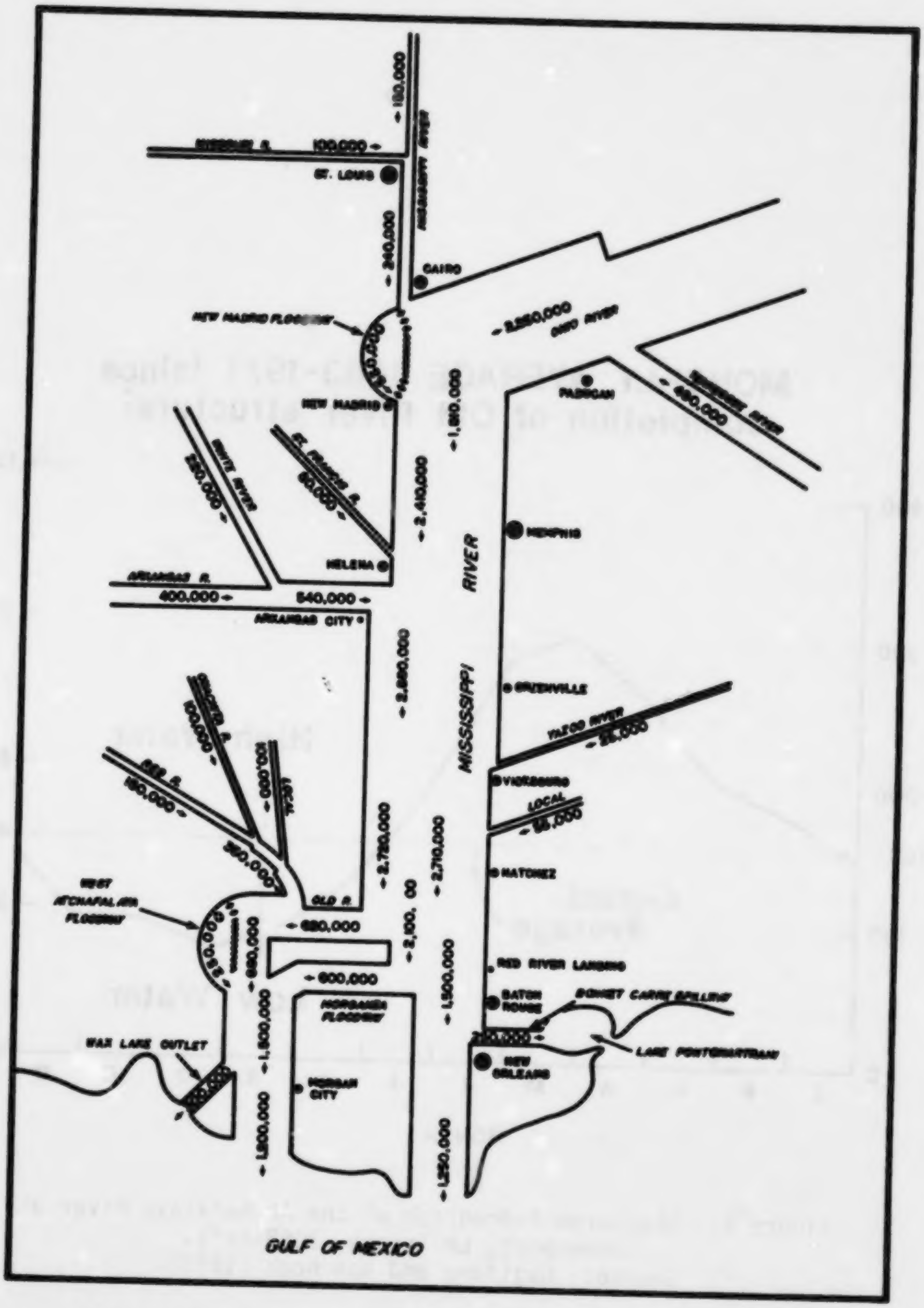


Figure 3. Distribution of Project Flood through the Mississippi River Basin.
Source: United States Army Corps of Engineers (1967).

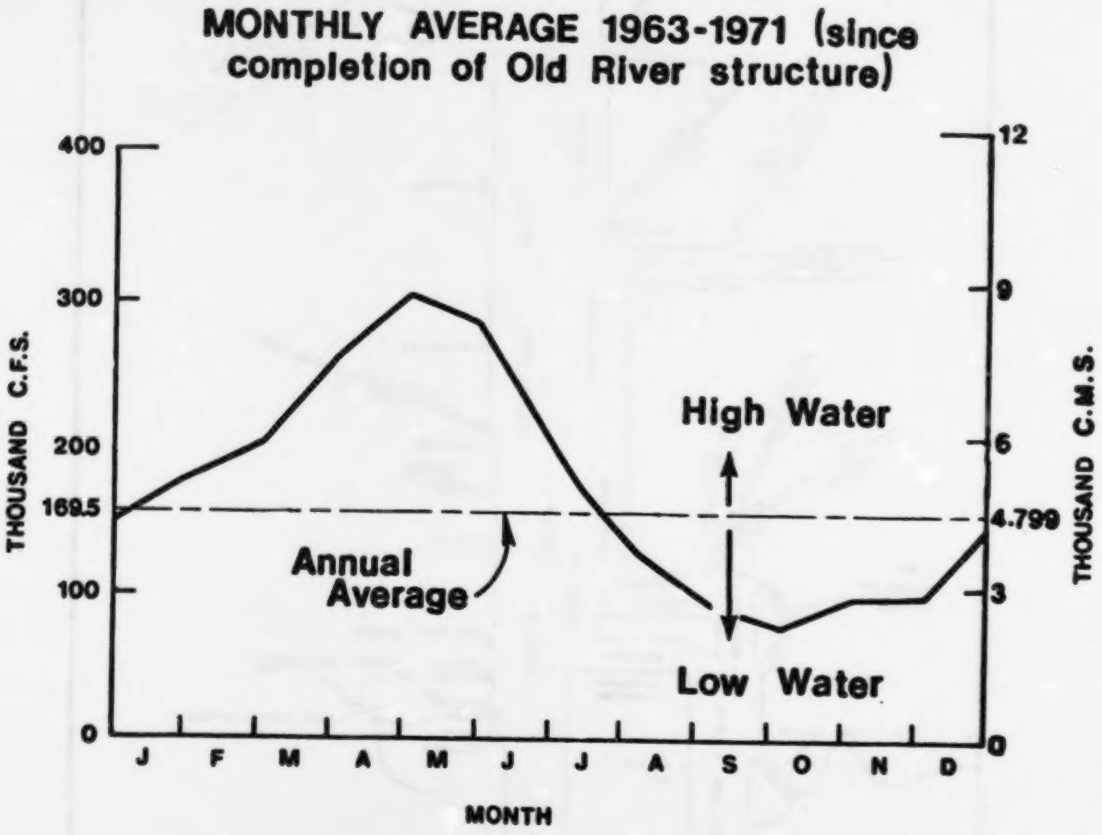


Figure 4. Discharge hydrograph of the Atchafalaya River at Simmesport, Louisiana, 1963-1971.
Source: Gagliano and van Beek (1975).

MATERIALS AND METHODS

SAMPLING STATION SELECTION

Sampling stations were selected so as to define water quality, productivity, and fixed energy and nutrient export. The 148 sampling stations were:

1. geographically distributed throughout the Atchafalaya Basin,
2. located at the major inlet and outlets to the Atchafalaya Basin Floodway, and
3. located at major water exchange points within the Atchafalaya Basin Floodway.

SAMPLE COLLECTION AND ANALYSES

Helicopters were employed to collect water and biological samples on 14 separate occasions from 1974 to 1977 in which 80 to 130 stations were sampled throughout the Basin in approximately 10 days. The use of helicopters allowed for complete geographical coverage, including remote areas. The frequency of sampling was approximately quarterly, but due to other priorities imposed upon helicopter usage, schedules were not rigidly maintained. The sampling team consisted of a limnologist, pilot, and sampling technician, operating from a pontoon-equipped Bell UH-1H helicopter.

The helicopters were equipped with an electric winch and approximately 200 feet of hollow-core, multi-conductor cable attached to a submersible pump and an Interocean systems sensor package capable of making in situ measurements of conductivity, temperature, optical transmissivity, depth and pH. Rack-mounted equipment located inside the helicopter provided analog recording capabilities and a digital display of the sensor values. An echo sounder, Secchi disc, sample containers, and related equipment items necessary for water sampling were also carried in each helicopter.

After landing at the approximate sampling site, the helicoter was water-taxied to the sampling site. When necessary, a small buoy was deployed to serve as a reference to the pilot for maintaining the helicoter on station. Secchi disc measurements were made and bucket-dipped surface water samples were collected. In fast flowing waters the helicoter was allowed to drift and only surface samples were collected. In a previous study, the U.S. Department of Interior (1969) demonstrated that in fast flowing waters in the Atchafalaya Basin physical factors and chemical constituents were uniformly mixed.

After the sensor-pump package was immersed, sensor outputs were checked, analog recorders were activated and the sensor package was lowered slowly through the water column until it contacted bottom. It was then raised to a point just off the bottom to avoid pump damage from bottom sediments entering the intake. The digital readout of each sensor at that depth was recorded on the field data sheet and the submersible pump was activated. Water samples were collected after allowing sufficient time for the pump to completely purge the hollow cable of water from the previous station. (Purge times were routinely measured for the system). Sampling depths for the collection of other water samples were chosen after inspection of the analog strip-chart records to best represent the water column. Upon completion of sampling near the bottom, the sensor was raised to the next level, the digital values were recorded, the hose was purged, and the water samples were pumped. This process was repeated at each depth selected for collection of water samples at a given site. However, in extremely shallow water or in fast flowing water, samples were collected only from the surface.

Integrated samples for chlorophyll a and carbon analysis were collected by continuing to pump while raising or lowering the sensor package. Water collection for chlorophyll a analysis was timed to provide a uniform mixture of water from the lower limit of the photic zone to the surface while water for carbon analysis was integrated from the surface to the bottom.

At each sampling depth, water samples were collected for nutrient, carbon analysis, alkalinity, pH, conductivity, and dissolved oxygen determinations. For nutrient analysis, two 4-ounce sample bottles were filled and the samples immediately preserved with 0.25 ml of mercuric chloride solution (25 g $HgCl_2$/l of water).

Samples for dissolved oxygen determinations were collected in 300-ml BOD bottles, immediately fixed with Hach powder pillow reagents, and stored out of direct sunlight. Samples for pH, conductivity, and chlorophyll a analysis were collected in polyethylene bottles and refrigerated in the dark until completion of the day's sampling operation.

Electrode determinations for pH were made as soon as possible following their delivery to the field laboratory at the end of the day's sampling. Portable pH meters and combination electrodes were used to determine pH. Dissolved oxygen samples were titrated with phenylarsine oxide in the field laboratory within 16 hours after collection.

Chlorophyll a analyses were performed at the end of each day in the field laboratory. One of each pair of nutrient samples was filtered through a type HA 0.45-micron Millipore filter into a clean unused polyethylene bottle, recapped, and along with its unfiltered counterpart, forwarded to Environmental Monitoring Systems Laboratory, Las Vegas for analysis.

Upon receipt at the field laboratory in Baton Rouge, the pair of carbon samples were preserved with phosphoric acid to a pH of below 2. One of the pair was filtered through a type HA 0.45-micron Millipore filter into a clean unused polyethylene bottle and recapped. Both of these samples were then refrigerated for subsequent analysis. Analyses were performed either within 30 days with a Dohrman-52 carbon analyzer (EPA, 1974) or after the samples were sealed using an Oceanographic International ampule sealer, at a later date using an Oceanographic International carbon analyzer (EPA, 1974).

Intensive sampling of five areas (Fordouche, Buffalo Cove, Pat Bay, inlet of the Basin Proper, Atchafalaya River main stem, and the outlets of the Basin Proper-Wax Lake and Morgan City) was conducted using small boat crews on approximately a monthly basis. Two 18-foot john boats equipped with 50-horsepower Mercury outboard motors were used. The boats were equipped with an electric winch and 100 feet of hollow-core cable attached to a pump. The cable was lowered to the bottom and then raised to a point just off the bottom to avoid sediments entering the intake. Water samples were collected at various depths by raising the cable and pumping water samples into the boat. However, in extremely shallow or fast flowing water, only surface samples were collected. The same type of physical, chemical and biological data and samples were collected as previously described. After completion of a sampling day, the small boat crew(s) would return to the most convenient location, either the field laboratory or a laboratory houseboat. Analysis of samples was then performed at either location as previously described.

The EPA's National Eutrophication Survey (NES) sampled 249 lakes in 13 eastern and southeastern states in 1973 while 17 Louisiana lakes were sampled in 1974. Each lake was sampled during the spring, summer, and fall using the same pontoon-equipped helicopters used in the Atchafalaya study. In fact, the identical methods and equipment were used as described above for the NES study except:

1. carbon samples were not collected, and,
2. depth-integrated samples for chlorophyll a were uniform mixtures of water from the surface to a depth of 4.6 m (15 feet) or from the surface to the lower limit of the photic zone, whichever was greater.

The analytical methods used to process the nutrient samples at the Environmental Monitoring Systems Laboratory--Las Vegas are outlined in Table 1. All of the analyses were performed using adaptations of automated procedures described in "Methods for Chemical Analysis of Water and Wastes" (EPA, 1971). Details of adaptations are given in EPA (1974a, 1975).

The analytical methods used to process water samples at the Baton Rouge field station are listed in Table 2. All of the analyses were performed in accordance with the procedures described in "Methods for Chemical Analysis of Water and Wastes" (EPA, 1974), except for chlorophyll a and water transparency. Chlorophyll a analyses were performed according to the fluorometric procedure described by Yentsch and Menzel (1963) while water transparency was measured in the field by Secchi disc readings as described by Welch (1948).

TABLE 1. ANALYTICAL METHODS AND PRECISION OF LABORATORY ANALYSES PERFORMED AT THE ENVIRONMENTAL MONITORING SYSTEMS LABORATORY--LAS VEGAS

Parameter	Method	Precision
Dissolved Orthophosphate	Single reagent methods involving colorimetric determination of antimony-phosphomolydate complex.	± 0.005 mg/l P or ± 5%
Total Phosphorus	Persulfate oxidation followed by above method for dissolved orthophosphate.	± 0.005 mg/l P or ± 5%
Nitrite-Nitrate-N	Cadmium reduction followed by the above method for Nitrate-N	± 0.010 mg/l N or ± 5%
Ammonia-N	Alkaline phenol hypochlorite reacaction producing indophenol blue.	± 0.005 mg/l N or ± 5%
Kjeldahl-N	Acid digestion followed by the above procedure for ammonia nitrogen.	± 0.10 mg/l N or ± 5%
Total Alkalinity	Methyl orange colorimetric.	± 0.5 mg/l or ± 5% as $CaCO_3$

STATION CODING

Each sampling station was assigned a seven-place alphanumeric STORET code, e.g., E032000. STORET (STOrage and RETrieval) is the EPA computer index system which processes and maintains water quality data. The first letter of the station code identifies a geographic area (Figure 5-11) of the Atchafalaya Basin as follows:

A - North of U.S. Highway 1 and Simmesport, Louisiana.

B - The main stem of the Atchafalaya River between Simmesport and Krotz Springs, Louisiana.

C - West Atchafalaya floodway system, north of U.S. Highway 190 south of State Highway 1 and between the West Protection Levee and Main Stem Levee.

D - Morganza floodway system, north of U.S. Highway 190 and between Main Stem Levee and East Protection Levee.

TABLE 2. ANALYTICAL METHODS AND PRECISION OF LABORATORY ANALYSES PERFORMED AT THE BATON ROUGE FIELD STATION

Parameter	Method	Precision
Chorophyll a	Filtration, grinding, acetone extraction with fluorometric detection.	± 0.5 μg/l or ± 10%
Total Organic* Carbon	Acidification, pesulfate digestion ampule sealed with infrared detection.	± 1.0 mg/l c or ± 10%
Total Organic Carbon	Reductive pyrolysis with flame ionization detection.	± 1.0 mg/l c or ± 10
Dissolved Organic Carbon	Filtration followed by either of the above methods for total organic carbon	± 1.0 mg/l c or ± 10%
pH	Electrometric measurement with combination electrode	± 0.1 pH unit
Temperature	Thermometer	± 0.1° C

* Preparation of sealed ampule performed at Baton Rouge field station, analysis performed by contractor.

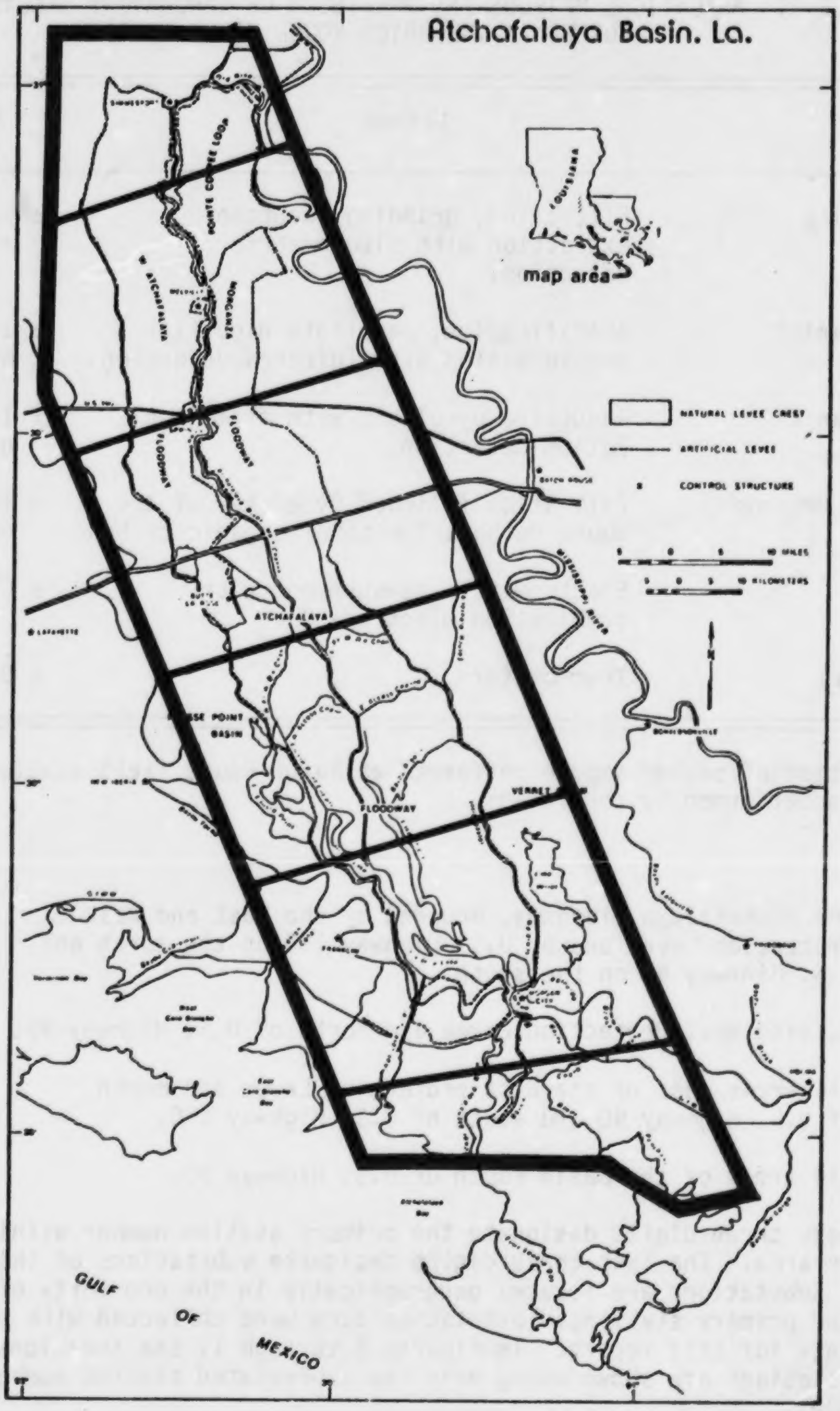
E - The Atchafalaya Floodway, bounded by the East and West Protection Levee and by U.S. Highway 190 on the north and U.S. Highway 90 on the south.

F - Outside West Protection Levee and North of U.S. Highway 90.

G - All areas east of the East protection Levee and north of U.S. Highway 90 and south of U.S. Highway 190.

H - All areas of the Basin south of U.S. Highway 90.

The next three digits designate the primary station number within a given geographic area. The last three digits designate substations of the primary station. Substations are located geographically in the proximity of already established primary stations. Substation data were collected with primary station data for this report. In Figures 5 through 11 the locations of sampling stations are shown using only the abbreviated station number e.g., A-1 for A001.



Figures 5-11. Base map and station locations in the Atchafalaya Basin.

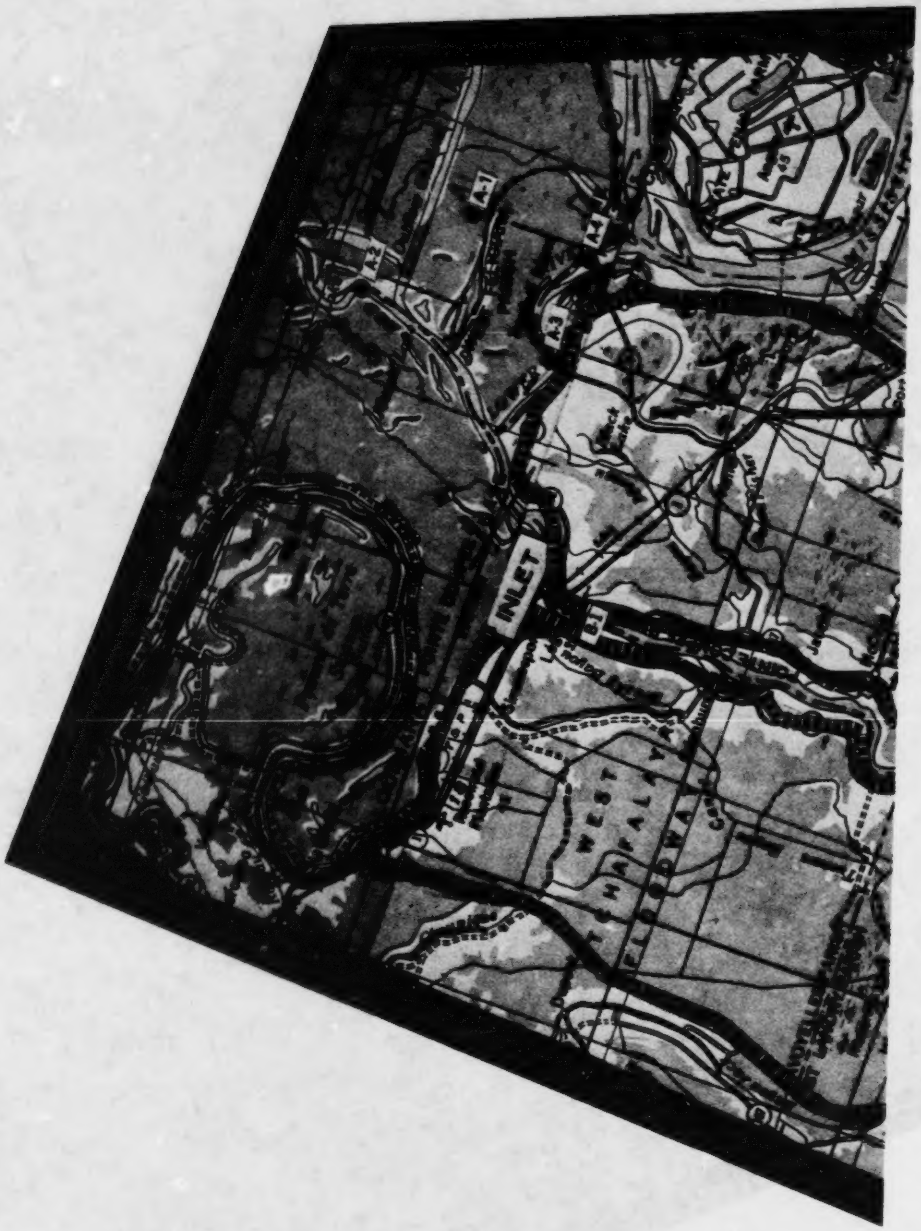


Figure 6.

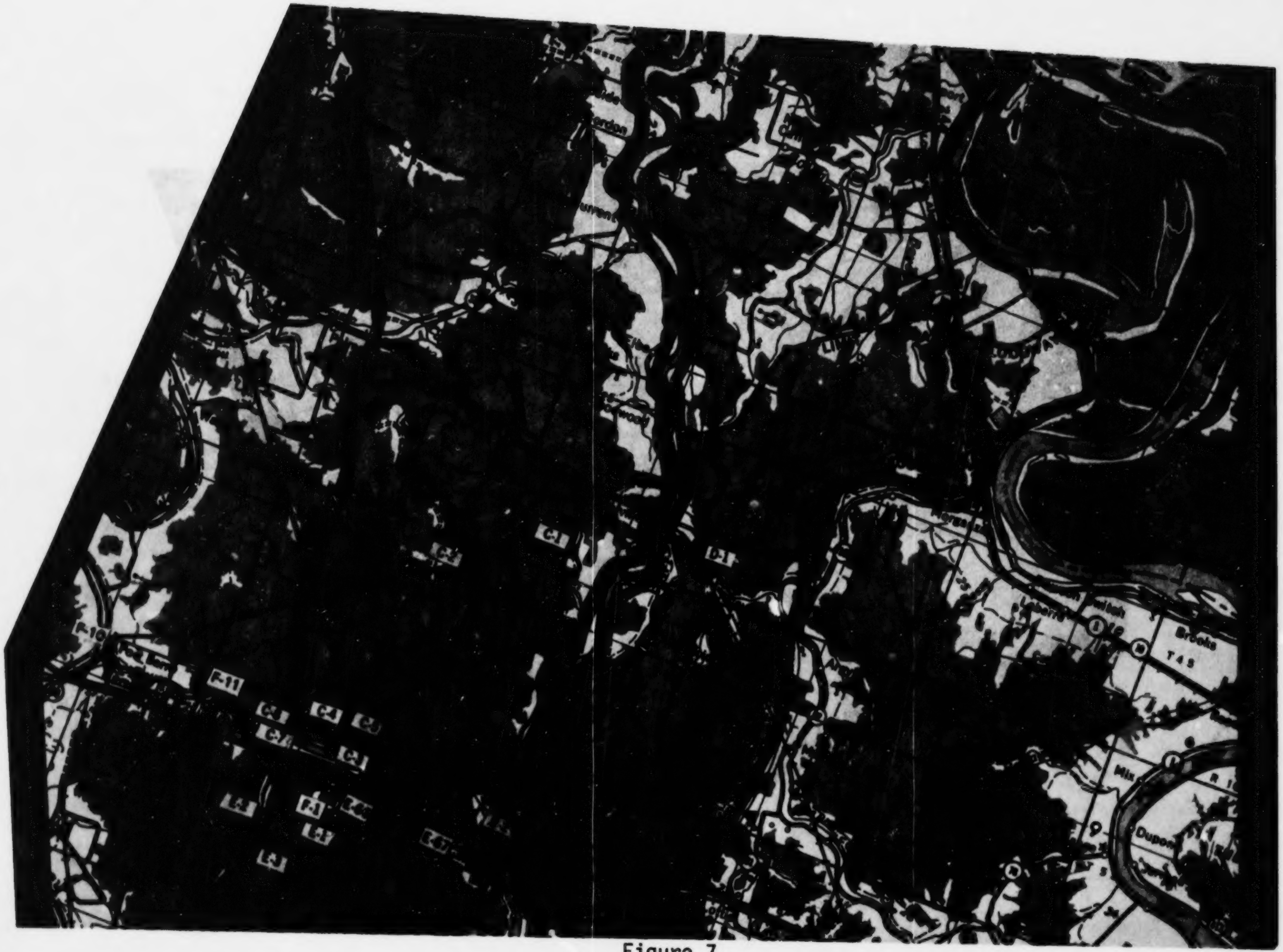


Figure 7.

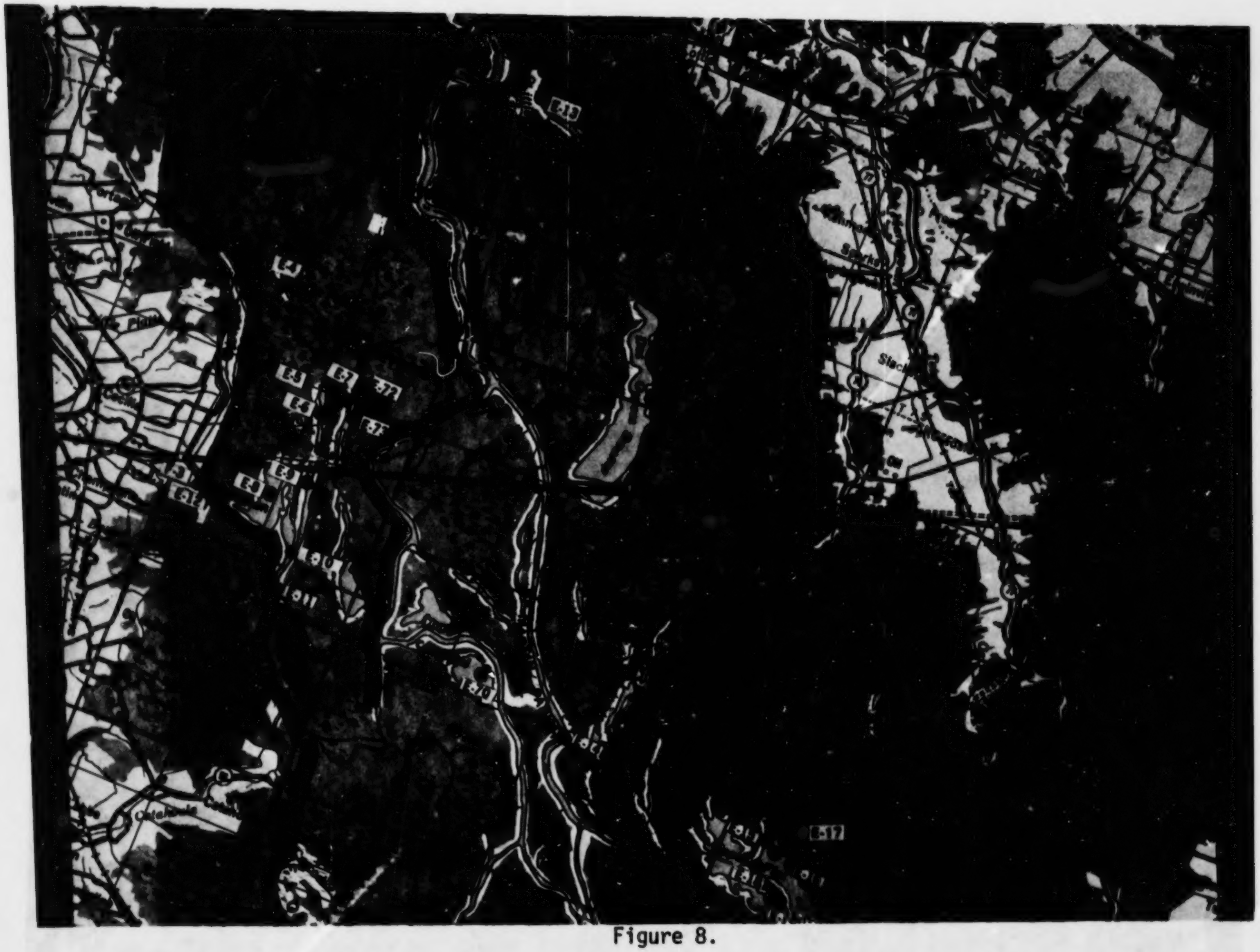


Figure 8.

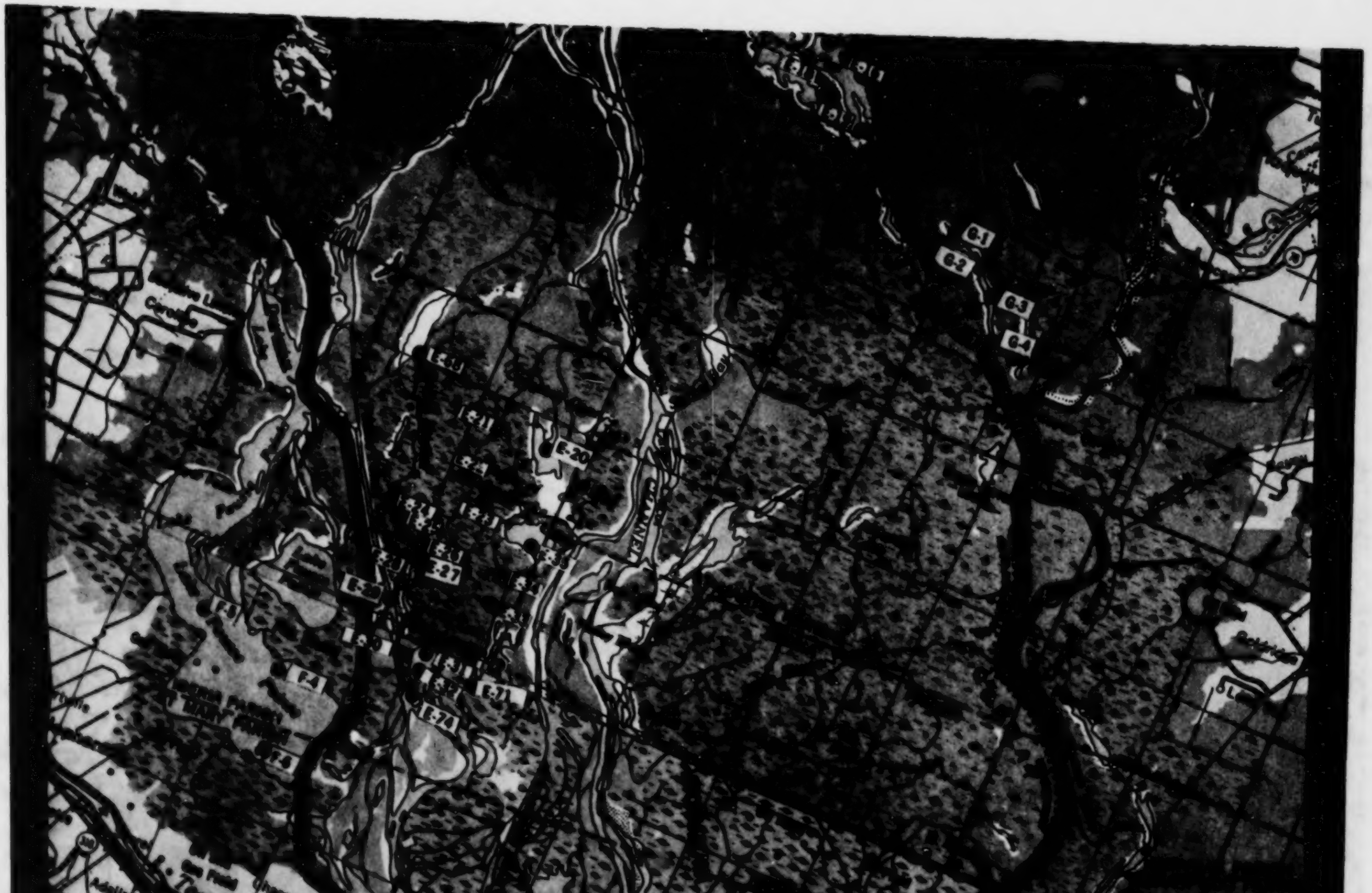


Figure 9.

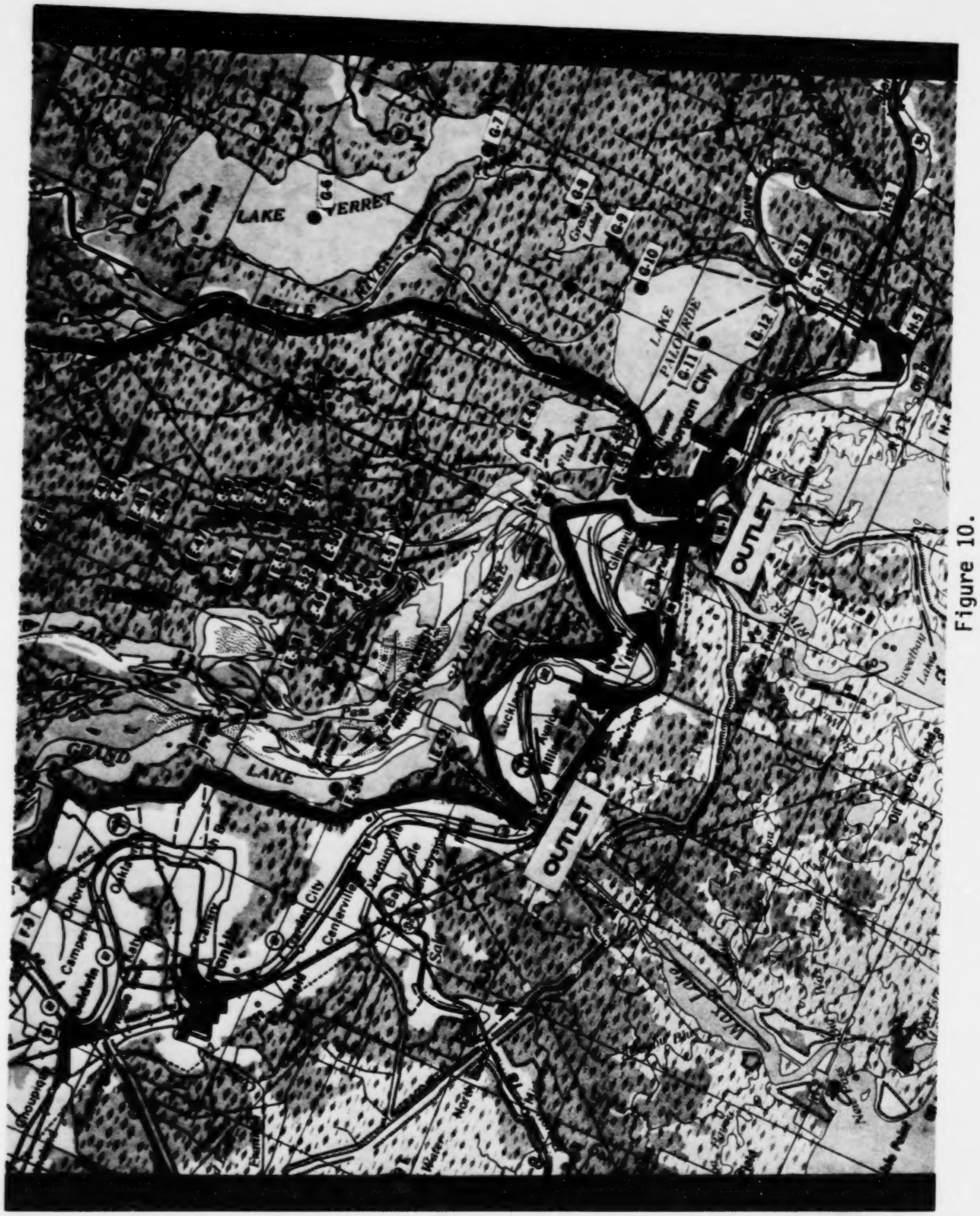

LAKE VERRET
G.4
G.6
G.7
G.8
G.9
G.10
LAKE PALOURDE
G.11
G.12
G.13
G.14
H.3
H.5
Morgan City
OUTLET
GRAND
LAKE
OUTLET

Figure 10.

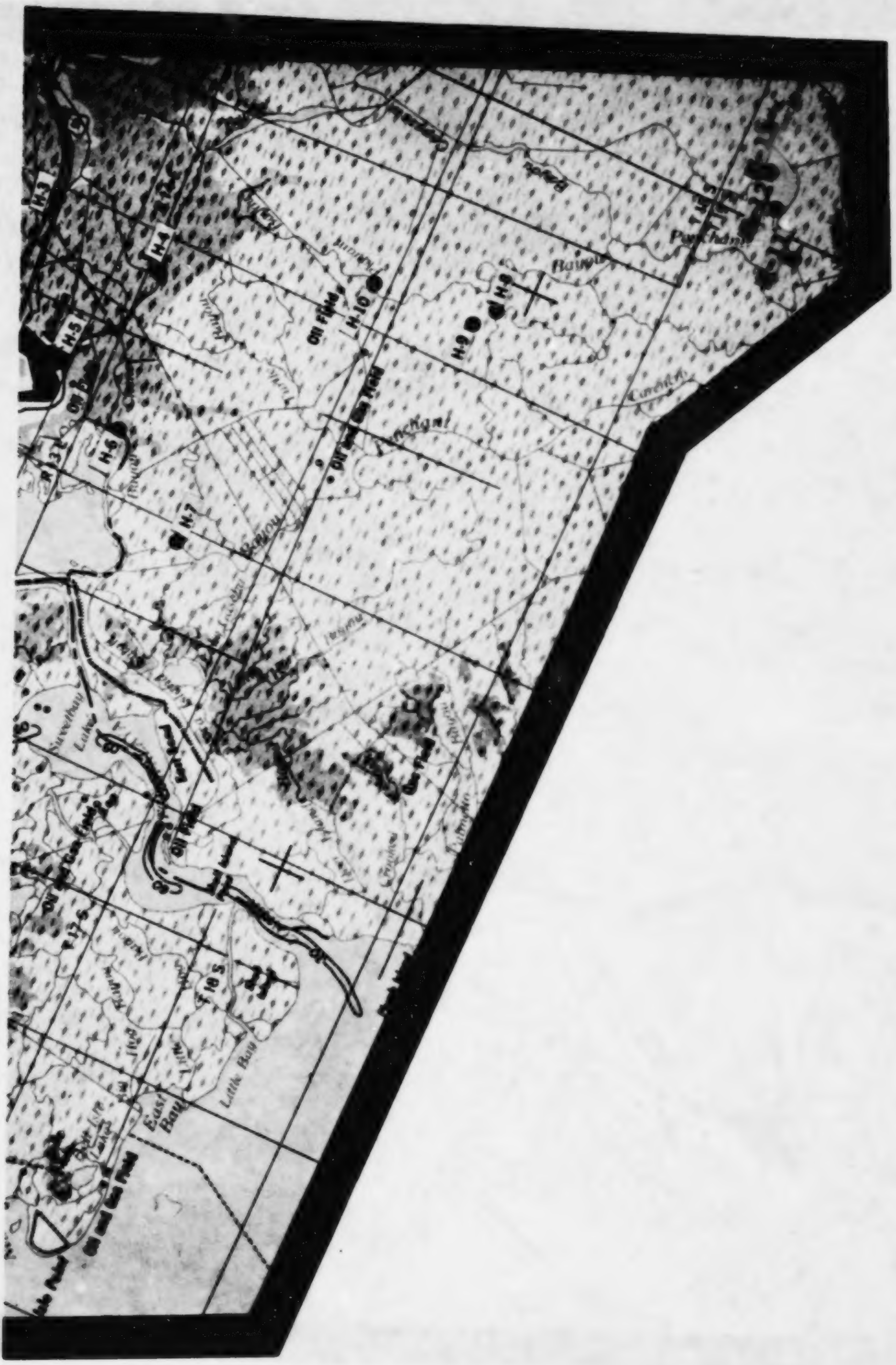

H-3
H-4
H-5
H-6
H-7
H-8
H-9
H-16
Oil Field
Oil and Gas Field
Sweetbay Lake
East Bay
Little Bay
Bayou

Figure 11.

DATA MANAGEMENT

Data collected by the Atchafalaya Basin Water and Land Quality Study and NES were stored in STORET and manipulated as prescribed by Bliss et al. (1975).

Atchafalaya Data

Basic calculations for parameters measured by the Atchafalaya Basin Water and Land Quality Study were performed in such a way to give equal weight to each depth sampled at a station on a particular day, each day sampled at a station during a time interval, and each station sampled in a given geographical area during a time interval.

Mean parameter values for each day sampled at a station were calculated as follows:

$$\overline{\text{par}}_{jk} = \sum_{i=1}^{D} \text{par}_i \;/\; D \qquad (1)$$

where $\overline{\text{par}}_{jk}$ = mean value for a parameter at the jth sampling station on the kth day,

par_i = value for the ith depth, and

D = the number of depths for which a parameter was sampled at the jth sampling station on the kth day.

Mean parameter values for each sampling station during a time interval were calculated as follows:

$$\overline{\overline{\text{par}}}_{j} = \sum_{k=1}^{E} \overline{\text{par}}_{jk} \;/\; E \qquad (2)$$

where $\overline{\overline{\text{par}}}_{j}$ = mean value for a parameter at the jth sampling station during a time interval, and

E = the number of days the jth sampling station was sampled during a time interval.

Mean parameter values for a geographical area during a time interval were calculated as follows:

$$\overline{\overline{\overline{\text{par}}}} = \sum_{j=1}^{S} \overline{\overline{\text{par}}}_{j} \;/\; S \qquad (3)$$

where $\overline{\overline{par}}$ = mean value for a parameter in a geographical area during a time interval, and

S = the number of sampling stations in a geographical area sampled during a time interval.

If a parameter was not sampled on at least three different days during a time interval, the station's mean parameter value ($\overline{\overline{par}}_j$) was not used in formula 3 in determining the mean value for the parameter ($\overline{\overline{par}}$) in a geographical area during a time interval.

Formulas 1, 2, and 3 were used to determine parameter values for total phosphorus (TP), dissolved orthophosphorus (OP), ammonia-nitrogen (NH_3N), nitrite-nitrate-nitrogen (NO_2NO_3N), Kjeldahl-nitrogen (TKJEL), total alkalinity (TALK), Secchi disc transparency (SECCHI), dissolved oxygen (DO), collected by the Atchafalaya Basin Water and Land Quality Study. Unlike the above parameters where measurements were made at various depths, only one chlorophyll a (CHLA), total organic carbon (TOC), and dissolved organic carbon (DOC) measurement was made at any individual sampling station on a given day. Therefore,

$$\overline{CHLA}_{jk} = CHLA, \qquad (4)$$

$$\overline{TOC}_{jk} = TOC, \text{ and} \qquad (5)$$

$$\overline{DOC}_{jk} = DOC, \qquad (6)$$

where $\overline{CHLA}_{jk}$, $\overline{TOC}_{jk}$, and $\overline{DOC}_{jk}$ = the mean value for the parameter at the jth sampling station on the kth day, and

CHLA, TOC, and DOC = the parameter value for an integrated sample taken at the jth sampling station on the kth day.

Particulate organic carbon (POC) parameter values were derived by subtracting DOC values from TOC values. Therefore,

$$\overline{POC}_{jk} = \overline{TOC}_{jk} - \overline{DOC}_{jk} \qquad (7)$$

where $\overline{POC}_{jk}$ = the mean value for POC at the jth sampling station on the kth day

However, if $\overline{DOC}_j$ exceeded $\overline{TOC}_j$ on the kth day because of analytical error, the $\overline{POC}_{jk}$ and $\overline{TOC}_{jk}$ were not used in determining the $\overline{POC}_j$.

The ratio of TP to inorganic nitrogen ($NH_3N = NO_2NO_3N$) at a sampling station on a given day was calculated as follows:

$$\overline{N\text{-}P}_{jk} = \frac{\overline{NH_3N}_{jk} + \overline{NO_2NO_3N}_{jk}}{\overline{TP}_{jk}} \qquad (8)$$

however, if at the formula 1 level TP, NH_3N, or NO_2NO_3N was missing at the ith depth, all three nutrient components were deleted in determining the $\overline{N\text{-}P}_{jk}$ value.

Standard deviations for mean parameter values ($\overline{\overline{par}}_j$) at a sampling station during a time interval were calculated from the mean parameter values ($\overline{par}_{jk}$) for each day sampled at the station while standard deviations for mean parameter values ($\overline{\overline{par}}$) in a geographical area during a time interval were calculated from the mean parameter values ($\overline{\overline{par}}_j$) for each sampling station in the geographical area.

NES Data

Data calculations for parameters measured by NES were performed in such a way as to give equal weight to each depth sampled at a station, each station sampled in an individual lake during a sampling round, each sampling round on an individual lake, and each lake in a geographical area.

Mean parameter values for each NES sampling station were calculated as follows:

$$\overline{par}_j = \sum_{i=1}^{D} par_i \,/\, D \tag{9}$$

where $\overline{par}_j$ = mean value for a parameter at the jth sampling station during a sampling round,

par_i = value for the ith depth, and

D = the number of depths for which a parameter was measured at the jth sampling station during a sampling round.

Mean parameter values for each sampling round were calculated as follows:

$$\overline{\overline{par}}_k = \sum_{j=1}^{S} \overline{par}_j \,/\, S \tag{10}$$

where $\overline{\overline{par}}_k$ = mean value for the kth sampling round on a given lake, and

S = number of sampling stations.

Mean lake parameter values for a given sampling year were calculated as follows:

$$\overline{\overline{\overline{par}}}_l = \sum_{k=1}^{3} \overline{\overline{par}}_k \,/\, 3 \tag{11}$$

where $\overline{\overline{\overline{par}}}_l$ = mean parameter value for the lth lake.

Mean parameter values for the lakes in a geographical area were calculated as follows:

$$\overline{\overline{\overline{par}}} = \sum_{l=1}^{L} \overline{\overline{par}}_l / L \qquad (12)$$

where $\overline{\overline{\overline{par}}}$ = mean value for a parameter in a geographical area, and

L = the number of lakes sampled in the geographical area.

Lake parameter values were calculated only when values were available for the first, second, and third sampling rounds during a given sampling year from a lake. Formulas 9, 10, 11, and 12 were used to determine parameter values for TP, OP, NH_3N, NO_2NO_3N, TKJEL, SECCHI, DO, TALK, and PH for NES data.

The ratio of TP to inorganic nitrogen ($NH_3N + NO_2NO_3N$) at a sampling station on a given day was calculated as follows:

$$\overline{N\text{-}P}_j = \frac{\overline{NH_3N}_j + \overline{NO_2NO_3N}_j}{\overline{TP}_j} \qquad (13)$$

however, if TP, NH_3N, or NO_2NO_3N was missing at the ith depth, all three nutrient components were deleted in determining the $\overline{N\text{-}P}_j$ value.

Unlike the above parameters where measurements were made at various depths, only one CHLA measurement was made at any individual sampling station during a sampling round. Therefore,

$$\overline{CHLA}_j = CHLA \qquad (14)$$

where $\overline{CHLA}_j$ = the mean CHLA concentration for the jth sampling station during a sampling round, and

CHLA = the CHLA concentration from an integrated water sample.

Standard deviation for mean parameter values ($\overline{\overline{\overline{par}}}$) in a geographical area were calculated from the mean parameter values ($\overline{\overline{par}}_l$) for each lake in the geographical area.

RESULTS AND DISCUSSION

STATION DATA

Appendix A summarizes the water quality data collected in the Atchafalaya Basin Water and Land Quality Study. The appendix presents station means for all variables, with the number of days sampled, standard deviations of means, and minimum and maximum daily means.

COMPARISON OF BASIN TO OTHER AREAS

NES sampled 249 lakes located in 17 eastern and southeastern states exclusive of Louisiana in 1973 (Table 3) while 17 Louisiana lakes outside of the Atchafalaya Basin were sampled in 1974 by NES (Table 4). Data from these lakes are compared to those from the Atchafalaya Basin (Table 5). NES data collected from water bodies located within the Atchafalaya Basin were not included with the NES data. The three sets of data are comparable as the same analytical techniques were employed. However, temperature data are not comparable as the NES lakes were sampled on only a seasonal basis (spring, summer, and fall) while Atchafalaya Basin stations were sampled throughout the year. In addition, carbon moieties (TOC, DOC, or POC) were not determined in the NES studies.

Waters contained within the Atchafalaya Basin are rich in nutrients. While TP values were extremely high for all three sets of data, the Atchafalaya Basin had the highest mean concentration of TP (199 μg/l). By comparison, various limnologists, e.g., Vollenweider (1975), Dillon (1975), and Larsen and Mercier (1976) utilize a mean yearly value of 20 μg/l or above of ambient TP as being indicative of an eutrophic state. In direct contradiction, Well annd Demas (1977) state that TP concentrations in the Atchafalaya Basin are relatively low because values are generally less than 150 μg/l.

Inorganic nitrogen ($NH_3N + NO_2NO_3N$), TKJEL, OP, DO, and pH means recorded for the Basin are higher than in other Louisiana lakes but lower than other eastern and southeastern lakes.

The mean inorganic nitrogen levels for the Atchafalaya Basin are relatively high (462 μg/l) (149 μg/l NO_2NO_3N + 313 μg/l NH_3) = 462 μg/l) when compared to Louisiana lake means (180 μg/l). Sawyer (1947) suggested that in lakes concentrations at spring overturn of 300 μg/l or over of inorganic nitrogen with sufficient phosphorus was the critical level of nitrogen for the development of algal blooms. However, the Basin had a very low N-P ratio mean (3:1).

TABLE 3. EASTERN AND SOUTHEASTERN STATES IN WHICH 249 LAKES WERE SAMPLED DURING 1973 BY NES

States	Number of Lakes*
Alabama	11
Delaware	6
Florida	40
Georgia	14
Illinois	31
Indiana	26
Kentucky	5
Maryland	4
Mississippi	5
New Jersey	13
North Carolina	16
Ohio	20
Pennsylvania	17
South Carolina	13
Tennessee	16
Virginia	8
West Virginia	4

* The names and locations of the lakes sampled are given in EPA (1975).

The CHLA mean for the Atchafalaya Basin was approximately half (11.0 μg/l) as high as the means for Louisiana lakes (19.3 μg/l) and the other NES lakes (26.3 μg/l). Light penetration, as measured by SECCHI, was approximately twice as high in Louisiana lakes (39 in) (99 cm) and three times as high in other NES lakes (48 in) (122 cm), on an average, as that in the Atchafalaya Basin (17 in) (43 cm).

The mean DO level for the Atchafalaya Basin was 6.3 mg/l while the mean percent of saturation was 67. However, DO levels and other parameter values vary dependent upon geographical area, season, and water stages as will be discussed in subsequent sections.

GEOGRAPHICAL DIFFERENCES

Parameter means for 20 geographical areas of the Atchafalaya Basin shown in Figure 12 are presented in Appendix B. The stations which are contained within each of the 20 geographical areas are presented in Table 6. The entire Atchafalaya Basin was divided into two major categories, i.e., areas totally encompassed by a system of levees referred to as the "leveed Atchafalaya system" and the areas "outside the leveed system."

TABLE 4. LOUISIANA LAKES EXCLUSIVE OF THOSE IN THE ATCHAFALAYA BASIN SAMPLED BY NES DURING 1974

Lake	Parish
Anacoco Lake	Vernon
Bruin Lake	Tensas
Lake Bistineau	Bienville, Webster
Black Bayou	Caddo
Bundicks Lake	Beauregard
Cocodrie Lake	Concordia
Cotile Lake	Rapides
Concordia Lake	Concordia
Cross Lake	Caddo
D'Arbonne Lake	Union
False River Lake	Pointe Coupee
Indian Creek	Rapides
Saline Lake	LaSalle
Turkey Creek	Franklin
Lake Vernon	Vernon
Black Lake	Natchitoches, Red River
Cocodrie Lake (lower)	Rapides

The leveed Atchafalaya system consists of the inlet to the system, the West Atchafalaya Floodway north of U.S. 190, the Morganza Floodway north of U.S. 190, the Atchafalaya Basin Floodway exclusive of the Fordouche area, the Fordouche area, and the outlets of the system (Figure 12).

The combined flow of the Red River and water diverted from the Mississippi River form the Atchafalaya River which enter the leveed Atchafalaya system at Simmesport. The combined flow is confined by artificial levees for the first 84 km. Inlet stations are located in the fast, well-mixed waters between Simmesport and Krotz Springs (Figures 6 and 7).

The upper leveed Atchafalaya system, north of U.S. Highway 190, is composed of the West Atchafalaya Floodway and the Morganza Floodway. Internal Atchafalaya River levees have eliminated prolonged overbank flooding, allowing agricultural development within these areas with the concomitant requirement for better drainage (Figure 5). These floodways are only used during major floods along the Mississippi River.

Certain areas within the Atchafalaya Basin Floodway were also examined i.e., Buffalo Cove, Upper Belle River and the Upper Flats (Figure 12). These areas were selected to compare water quality in eastern and western swamps

TABLE 5. COMPARISON OF PARAMETER MEANS, RANGES, NUMBER OF OBSERVATIONS (N) AND STANDARD DEVIATIONS OF THE MEANS (SD) FOR THE ATCHAFALAYA BASIN, LOUISIANA LAKES, AND EASTERN AND SOUTHEASTERN LAKES

Parameter	Eastern and Southeastern Lakes, NES 1973	Louisiana[*] Lakes, NES 1974	Atchafalaya Basin
TP (μg/l)			
N[#]	249	17	148
MEAN	148	86	199
RANGE[†]	8-2750	19-192	80-562
SD	295	50	78
OP (μg/l)			
N[#]	249	17	148
MEAN	68	25	58
RANGE[†]	3-1210	8-86	14-236
SD	175	20	33
NH_3N (μg/l)			
N[#]	249	17	149
MEAN	169	88	149
RANGE[†]	43-1257	43-169	20-1710
SD	168	41	145
NO_2NO_3N (μg/l)			
N[#]	249	17	149
MEAN	574	96	313
RANGE[†]	28-522	30-324	26-1192
SD	870	85	250
TKJEL (μg/l)			
N[#]	249	17	148
MEAN	1088	691	905
RANGE[†]	244-4950	460-875	469-9700
SD	896	134	774
N-P			
N[#]	249	17	148
MEAN	14.3	2.8	3.1
RANGE[†]	0.1-110.8	1.0-8.1	0.2-13.6
SD	17.7	1.8	2.1

(continued)

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[*] Exclusive of lakes in the Atchafalaya Basin.

[#] N represents the number of lakes sampled for the NES data or the number of stations sampled for the Atchafalaya Basin data.

[†] The ranges for NES data represent lake ranges while for Atchafalaya Basin data they represent station ranges.

TABLE 5. (Continued)

Parameter	Eastern and Southeastern Lakes, NES 1973	Louisiana[*] Lakes, NES 1974	Atchafalaya Basin
CHLA (μg/l)			
N[#]	249	17	148
MEAN	26.3	19.3	11.0
RANGE[†]	1.2-276.6	4.9-38.5	1.1-46.0
SD	39.8	10.2	4.9
SECCHI (in)[§]			
N[#]	249	17	147
MEAN	48	39	17
RANGE[†]	6-170	5-38	5-100
SD	32	10	12
DO (mg/l)			
N[#]	249	17	149
MEAN	7.2	6.2	6.3
RANGE[†]	4.0-14.9	4.9-7.8	1.8-9.9
SD	1.5	0.8	1.8
DOSAT (%)			
N[#]	--	17	148
MEAN	--	72	67
RANGE[†]	--	58-93	23-103
SD	--	9	19
TALK (mg/l)			
N[#]	249	17	149
MEAN	73	39	92
RANGE[†]	10-281	10-145	38-179
SD	67	44	21
PH			
N[#]	249	17	147
MEAN	7.6	6.9	7.4
RANGE[†]	4.8-10.4	6.1-8.0	6.4-8.4
SD	0.7	0.6	0.4

(continued)

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[*] Exclusive of lakes in the Atchafalaya Basin.

[#] N represents the number of lakes sampled for the NES data or the number of stations sampled for the Atchafalaya Basin data.

[†] The ranges for NES data represent lake ranges while for Atchafalaya Basin data they represent station ranges.

[§] Secchi disc transparency measurements were made in inches and are reported as such. They can be converted to centimeters by multiplying by 2.54.

TABLE 5. (Continued)

Parameter	Eastern and Southeastern Lakes, NES 1973	Louisiana* Lakes, NES 1974	Atchafalaya Basin
TOC (mg/l)			
N#	--	--	146
MEAN	--	--	10.6
RANGE†	--	--	3.3-31.6
SD	--	--	3.4
DOC (mg/l)			
N#	--	--	148
MEAN	--	--	6.2
RANGE†	--	--	2.4-14.4
SD	--	--	2.0
POC (mg/l)			
N#	--	--	144
MEAN	--	--	4.8
Range†	--	--	0.4-13.6
SD	--	--	2.2
TEMP (°C)			
N#	NAΨ	NAΨ	148
MEAN	NA	NA	18.6
RANGE†	NA	NA	6.7-31.8
SD	NA	NA	3.5

* Exclusive of lakes in the Atchafalaya Basin.

# N represents the number of lakes sampled for the NES data or the number of stations sampled for the Atchafalaya Basin data.

† The ranges for NES data represent lake ranges while for Atchafalaya Basin data they represent station ranges.

Ψ Not Applicable.

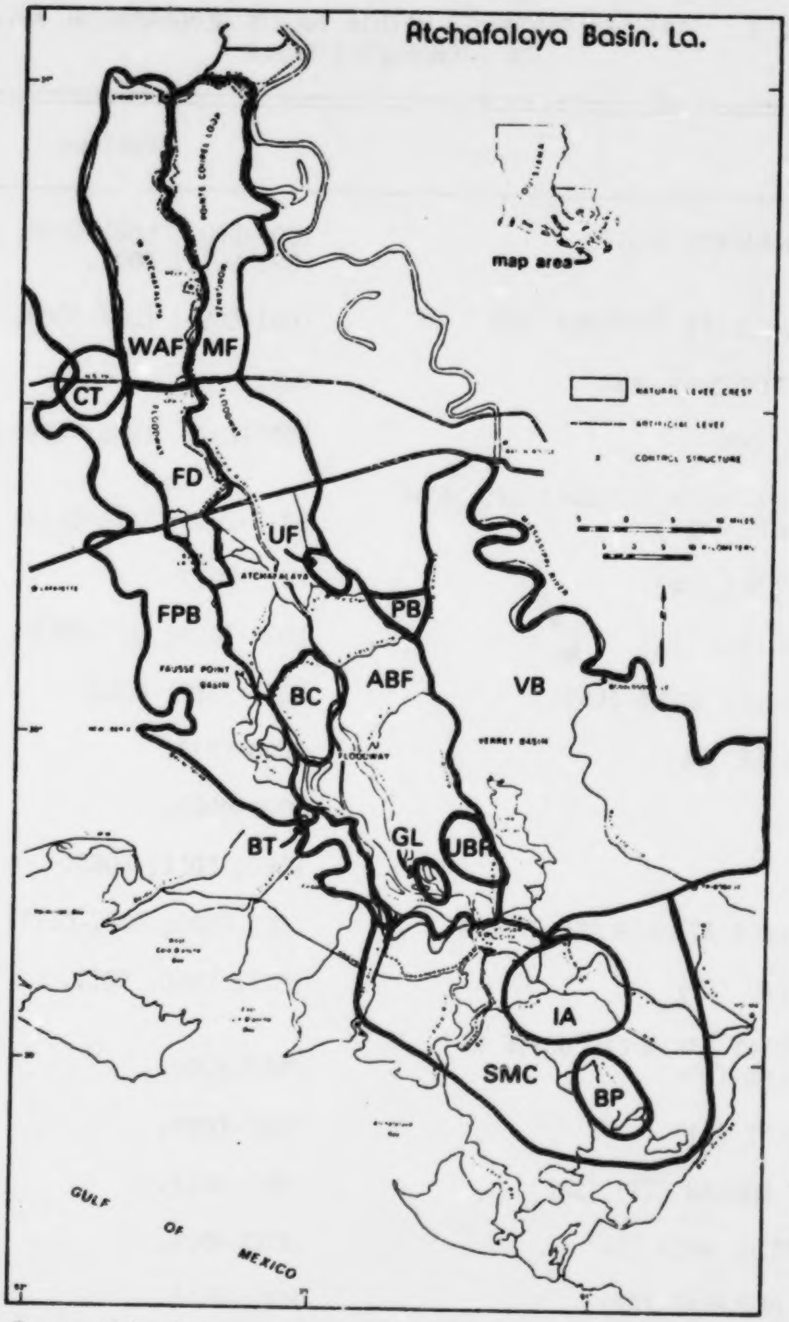

Figure 12. Geographical areas of the Atchafalaya Basin: MF, Morganza Floodway; WAF, West Atchafalaya Floodway; CT, Courtableau; ABF, Atchafalaya Basin Floodway; FD, Fordouche; BC, Buffalo Cove; UF, Upper Flats; GL, Grand Lake; UBR, Upper Belle River; FPB, Fausse Point Basin; BT, Bayouteche; SMC, South of Morgan City; IA, Industrial Area; BP, Bayou Penchant; VB,Verre Basin; and PB, Pat Bay.

TABLE 6. STATIONS CONTAINED WITHIN TWENTY GEOGRAPHICAL AREAS OF THE ATCHAFALAYA BASIN

Area	Stations
LEVEED ATCHAFALAYA SYSTEM	B001-B003; C001-C005; C007-C008 E001-E076; D001.
WEST ATCHAFALAYA FLOODWAY (WAF)	C001-C005; C007-C008.
MORGANZA FLOODWAY (MF)	D001.
FORDOUCHE (FD)	E001-E012; E066; E067; E072; E073.
ATCHAFALAYA BASIN FLOODWAY EXCLUSIVE OF FORDOUCHE (ABF)	E013-E065; E068-E071; E074-E076.
UPPER FLATS (UF)	E015-E019.
BUFFALO COVE (BC)	E020-E028; E030-E035; E068; E071.
UPPER BELLE RIVER (UBR)	E041-E058; E063.
GRAND LAKE (GL)	E036-E037.
INLET	B001-B003.
OUTLET	E060; E062; E065.
OUTSIDE LEVEED ATCHAFALAYA SYSTEM	F001-F009; G001-G015; H001-H013.
COURTABLEAU (CT)	F001; F010: F011.
FAUSSE POINT BASIN EXCLUSIVE OF BAYOU TECHE (FPB)	F002-F006.
BAYOU TECHE (BT)	F007-F009.
SOUTH OF MORGAN CITY (SMC)	H001-H013.
INDUSTRIAL AREA (IA)	H003-H006.
BAYOU PENCHANT (BP)	H007-H013.
VERRET BASIN (VB)	G001-G008; G009-G015.
PAT BAY (PB)	G001-G004; G015.

because of the differences in the total amount of water they receive per unit area. Diversion of water per unit of area for the western and eastern floodway segments, respectively, are on the order of 250 cfs/mi^2 (18.3 cms/km^2) and 75 cfs/mi^2 (5.5 cms/km^2) for an Atchafalaya River discharge of 425,000 cfs (12,036 cms) measured at Simmesport, Louisiana (van Beek et al., 1978). These estimates are admittedly rough when applied to specific geographical areas of the Atchafalaya Basin Floodway. However, they do suggest that on a relative basis the western segments receive about three times the amount of water per unit of area as the eastern segments.

The Buffalo Cove area is representative of the western segment while the Upper Flats and the Upper Belle River areas would represent eastern segments of the floodway. The Buffalo Cove area, comprising some 230 km^2, is located 50 km south of the Fordouche area and is bounded by natural levees and spoil-elevated natural levees. Sediments have largely filled in the northern one-third of the swamps compared to the rest of the area which contains a few permanent water bodies. The Grand Lake area of the Atchafalaya Basin Floodway was examined because it represents an open water area where optimal aeration from turbulance (wind, rain) is possible. The subareas of the Atchafalaya Basin Floodway (Fordouche, Upper Flats, Upper Belle River, Buffalo Cove and Grand Lake) are presented on Figure 12 with dashed lines. The Upper Belle River, Grand Lake and the Upper Flats areas are not distinct geographical areas defined by natural boundaries but rather areas where sample collections were made.

The Fordouche area which is normally considered to be a part of the Atchafalaya Basin Floodway was separated from the floodway in this report. While both of these areas experience prolonged overbank flooding with seasonal water-level patterns which mimic the Atchafalaya River, local runoff from outside the leveed Atchafalaya system and Atchafalaya River water contribute to the annual flooding of the Fordouche area while the rest of the Atchafalaya Basin Floodway receives water mainly from the Atchafalaya River.

The Fordouche area covers approximately 220 km^2 of the Basin. Ridged boundaries delineate the area as a hydrological unit. East and west boundaries are formed by continuous levees of the Atchafalaya River an the external levee system. U.S. Highway 190 and railroad embankments form the northern boundary, while a natural levee ridge bounds the area to the south. The flooding of the area is a modified backwater flooding regime. Atchafalaya River water, during high water months, enters across the southern boundary through the West Atchafalaya Basin Protection levee barrow pit after diversion from the river into Bayou Butte La Rose (Figure 8). The water then flows north through Henderson Lake and northern swamps in accordance with the river stage. Introduction of local runoff from outside the Fordouche area occurs across the northern boundary and through the Bayou Courtableau structure (Figure 7). Dewatering of the Fordouche area occurs by flow through the West Atchafalaya Basin Protection levee barrow pit and is also dependent on river stages.

Dewatering of the entire Atchafalaya Basin occurs through two major outlets. The water at either outlet is constricted as the river regains its identity after flowing through numerous channels, swamps, bayous, and sloughs until it exits the Atchafalaya Basin Floodway either at the Wax Lake outlet or the Morgan City outlet. Approximately 30 percent of the flow leaves the leveed Atchafalaya system at the Wax Lake outlet while 70 percent is discharged through the Morgan City outlet. At either outlet the water is fast and well-mixed.

The areas outside the leveed Atchafalaya system which were examined include Courtableau, Fausse Point Basin exclusive of Bayou Teche, Bayou Teche, Verret Basin and the area south of Morgan City (Figure 12). Containment of flood flows within the leveed Atchafalaya system has eliminated the prolonged overbank flooding in the outside areas.

The Courtableau study area receives water from an extensive agricultural area north of U.S. Highway 190. This area is dewatered by Bayou Courtableau which drains into the Fordouche area and also, to a minor extent, by water flowing south into the Fausse Point Basin.

The Fausse Point Basin is located to the west of the Atchafalaya Basin Floodway and receives water from the Courtableau area and from local drainage. The area contains a large lake system including Dauterive Lake and Lake Fausse Point (Figure 9). Agricultural activity is present in this area.

The Bayou Teche study area represents a unique area as it receives waters draining from agricultural lands and water from the Atchafalaya Basin Floodway. One station is located in Bayou Teche above the diversion canal from the floodway, another is located south of the confluence of the diversion canal and Bayou Teche, and the third in the diversion canal (Figure 10).

The Verret Basin located east of the Atchafalaya Floodway is contained between the East Atchafalaya Floodway Protection levee and the natural levees of the Mississippi River (Figure 12). Local precipitation is the only source of water to the area. Agriculture exists within the Verret Basin, however, such activity is much more limited than in the Fausse Point Basin. Sampling stations are located in western segments of the Basin in Pat Bay, Lake Verret, Grassy Lake, and Lake Palourde (Figures 9, 10, and 11).

Located within the Verret Basin, the Pat Bay area is a 45-km^2 hydrological unit that is well defined by natural and man-made boundaries (Figure 9). The Pat Bay area was selected because, in comparison to areas within the Atchafalaya Basin Floodway, Pat Bay experiences flooding episodes of local precipitation origin which are generally short-lived. "Rainwater swamps" of shallow depth and highly variable duration are formed within the Pat Bay area. While some sections of this area experience prolonged inundation, a minor relief appears to be sufficient to deter all but minimal exchange of the shallow floodwaters with either permanent water bodies or substantial channel systems. Water loss from the "rainwater swamps" is largely by evapotranspiration.

The study area south of Morgan City is characterized by extensive swamps, canals and marshlands (Figure 12). The marshes and swamps have an intricate tidal-drainage network dependent upon local runoff and tidal conditions. Two areas contained within this area were examined, e.g., an industrial area and Penchant Bayou area. The industrial area is located southeast of Morgan City in the vicinity of the confluence of the Bayou Chene and Bayou Black (Figure 11). The industrial complex present in this area includes ship and oil rig construction and allied industries. The Bayou Penchant area represents a unique area which receives water from both the Lower Atchafalaya River and water draining from the Verret Basin.

The subareas of the Verret Basin (Pat Bay) and the area south of Morgan City (industrial and Bayou Penchant) are presented on Figure 12 by dashed lines. The Courtableau, industrial, south of Morgan City and Bayou Penchant study areas are not distinct geographical areas as defined by natural boundaries, but rather areas where sample collections were made.

Water entering the leveed Atchafalaya system is rich in nitrogen and phosphorus content and is highly turbid, as indicated by a mean SECCHI value of 6 in (15 cm) (Table 7). This river water is oxygen rich with a mean DO content of 8.4 mg/l and with the DOSAT at 85.

Comparison of inlet and outlet parameter mean values for the Basin Proper reveals only a few differences. This is not particularly surprising when one considers that approximately 85 percent of the Atchafalaya River water remains intact as it flows through the Basin (Van Beek, In Press). However, SECCHI radically changes from a mean of 6 in (15 cm) at the inlet to 17 in (43 cm) at the outlet (Table 7). This change shows that a significant amount of supsended material settles out as water passes through the Basin Proper. This physical process would also account for the reduction of TP at the outlets as compared to the inlets. OP means are generally higher in areas within the leveed Atchafalaya system (63 μg/l) than at either the inlet (47 μg/l) or outlet (44 μg/l). Transformation and utilization of both the TP and OP pools must occur as water passes through the Basin.

The northern portions of the leveed Atchafalaya system represented by the West Atchafalaya Floodway and Morganza Floodway above U.S. Highway 190 have higher mean values for TP (270 and 343 μg/l, resectively) and TOC values (14.6 and 19.0 mg/l, respectively) than the Atchafalaya Basin Floodway exclusive of Fordouche (southern portion of the system - TP, 176 μg/l, and TOC, 9.1 mg/l). Mean SECCHI values are extremely low in the West Atchafalaya and Morganza floodways [14 and 7 in (36 and 18 cm), respectively] and CHLA values are quite low (7.8 and 7.4 μg/l, respectively).

The Fordouche area is a unique area of the Atchafalaya Basin Floodway in the fact that it receives water from the Courtableau area, the West Atchaflaya Floodway above U.S. Highway 190, and Atchafalaya River water. Its resultant chemical composition is therefore a mixture of the various sources. The mean TP value for the area (219 μg/l) is the highest of any area within the Basin Proper which is directly impacted by Atchafalaya River water, while its mean DO level (4.9 mg/l) is the lowest recorded for any geographical area.

TABLE 7. PARAMETER MEANS FOR GEOGRAPHICAL AREAS OF THE ATCHAFALAYA BASIN

	N*	TP (μg/l)	OP (μg/l)	NH_3N (μg/l)	NO_2NO_3N (μg/l)	TKJEL (μg/l)	DO (mg/l)	DOSAT %	TOC (mg/l)	DOC (mg/l)	POC (μg/l)	CHLA (μg/l)	SECCHI (in)	TEMP °C	pH	N-P	TALK (mg/l)
Leveed Atchafalaya System	78	194	63	126	229	768	5.8	61	10.2	6.3	4.7	8.5	19	18.7	7.3	3.2	92
West Atchafalaya Floodway	7	270	104	155	164	960	5.5	56	14.6	8.3	6.4	7.8	14	18.8	7.2	1.4	104
Morganza Floodway	1	343	137	138	300	1083	6.5	68	19.0	8.0	11.0	7.4	7	18.5	6.8	1.1	115
Fordouche	14	219	77	140	169	934	4.9	52	12.1	8.3	4.8	9.2	19	18.8	7.2	1.8	83
Atchafalaya Basin Floodway**	56	176	53	118	349	697	6.0	64	9.1	5.5	4.3	8.4	20	18.6	7.3	3.8	93
Upper Flats	5	124	48	84	196	701	5.0	56	9.1	6.8	3.6	7.6	29	19.9	7.3	3.0	92
Buffalo Cove	16	203	70	113	278	719	5.3	56	10.4	6.0	5.3	9.6	22	18.8	7.1	3.0	101
Upper Belle River	19	152	45	132	274	630	5.8	61	7.9	5.2	3.2	6.7	21	18.4	7.2	3.8	87
Grand Lake	2	151	37	82	505	501	8.1	85	8.5	4.0	4.9	8.6	11	17.5	7.7	4.9	85
Inlet	1	242	47	125	732	74	8.4	85	8.5	4.1	4.6	7.5	6	15.2	7.6	4.2	89
Outlet	3	193	44	151	715	80	7.9	82	8.1	4.6	4.5	6.4	17	17.1	7.6	5.7	81
Outside Leveed Atchafalaya System	38	207	54	155	303	1288	7.2	80	11.4	6.6	5.6	15.0	13	20.0	7.8	2.5	89
Courtableau	3	229	87	142	237	735	5.7	63	11.3	7.2	5.2	2.6	11	19.5	7.2	1.8	103
Fausse Point Basin***	5	225	52	137	193	1280	7.8	87	12.7	6.4	7.2	14.6	8	20.9	7.9	1.3	76
Bayou Teche	3	235	68	205	270	1060	5.7	66	10.8	6.5	4.1	8.2	8	21.9	7.5	2.1	73
Morgan City	13	201	38	152	502	1708	7.6	83	11.6	6.0	6.0	15.6	10	18.7	7.7	4.0	83
Industrial Area	4	198	47	162	594	1000	7.0	78	9.6	4.9	5.2	13.7	10	19.8	7.7	4.1	84
Bayou Penchant	7	212	31	156	355	2381	7.8	85	13.8	7.0	7.5	19.6	10	18.9	7.7	3.2	83
Verret Basin	14	180	62	156	130	1030	7.3	82	11.0	7.0	4.8	18.6	18	20.6	8.0	1.7	103
Pat Bay	5	187	68	157	119	857	5.6	62	12.4	8.0	5.2	12.7	23	20.7	7.6	1.7	109

* N - The number of stations located within a given geographical area. If there were less than 3 values for a parameter at a station, the values for that station were deleted from the analysis.

** Atchafalaya Basin Floodway exclusive of the Fordouche area.

*** Fausse Point Basin exclusive of Bayou Teche.

The amount of suspended material passing a given point in the Basin is highly correlated with the total volume of water passing that point (USGS, 1977). In turn, deposition rates of suspended material are a function of the amount of material in suspension, other factors being equal. Reduction in flow rates associated with backwater swamp areas further favors deposition and resulting loss of open water areas. Therefore, it is important to carefully examine water quality in the eastern and western segments of the Atchafalaya Basin Floodway because of the differences in the total amount of water they receive per unit area.

The Buffalo Cove area is reresentative of the western segment while the Upper Flats and the Upper Belle River areas would represent eastern segments of the Floodway (Figure 12). The major chemical difference between these areas is the mean ambient TP and OP levels (Table 7). The mean concentration of TP in the Buffalo Cove area (203 µg/l) was approximately one and one-half times the mean concentration of the Upper Flats (124 µg/l) area and one and one-third times the mean for the Upper Belle River area (152 µg/l). Water has to travel greater distances through backwater areas to reach the Upper Belle River and the Upper Flats areas when compared to the Buffalo Cove area. Reduction in flow rates associated with backwater areas favors depositions with the resultant loss of TP from the water column. The lowest TP concentration found in any of the geographical areas of the Basin was detected in the Upper Flats area. Buffalo Cove and Upper Belle River areas had elevated levels of inorganic nitrogen when compared to the Upper Flats area. Only minor differences in other parameter values (TKJEL, DO, TOC, DOC, CHLA, and SECCHI) were detected between the eastern and western segments of the Atchafalaya Basin Floodway, exclusive of Fordouche. N-P ratios were extremely low throughout all geographical areas of the Atchafalaya Basin and ranged from 1.1 to 5.7. In order to lower the potential for sediment deposition, flows per unit area in the western segment of the Atchafalaya Basin Floodway could be reduced to approximate those in the eastern segment without adversely affecting environmental quality as long as the extent, duration, and depth of natural flooding is maintained.

Areas both within and outside the leveed Atchafalaya system are rich in nitrogen and phosphorus; they contain more than 190 µg/l of mean TP and 400 µg/l of inorganic nitrogen (Table 7). The most dramatic differences noted between the areas are in mean CHLA concentrations and mean DOSAT. Mean CHLA levels in the leveed Atchafalaya system were 8.5 µg/l while the mean for outside the system was 15.0 µg/l (Table 7). The mean DOSAT was only 61 for the inside system compared to 80 percent in the outside system. These differences in mean DOSAT are related to the higher autotrophic production of CHLA in the outer system.

SEASONAL DIFFERENCES

Parameter means for the 20 geographical areas were compared by seasons (Appendix C). The seasons are defined as follows: winter (December 21 to March 20), spring (March 21 to June 20), summer (June 21 to September 20), and fall (September 21 to December 20).

A number of trends emerge when examining the seasonal data for the leveed Atchafalaya system (Table 8). The NH_3N mean value dramatically rises during the summer months when the mean TEMP value reaches its seasonal high. Mean NH_3N values during winter, spring, summer, and fall were 91, 73, 304, and 87 µg/l, respectively, while the mean TEMP values were 10.9, 21.2, 30.0, and 15.5, respectively. The TKJEL mean was also elevated during the summer, which was basically due to the increase in the NH_3N. However, the NO_2NO_3N mean was highest in the spring, 370 µg/l as compared to 280 µg/l during fall, 268 µg/l during summer, and 252 µg/l during winter. Total nitrogen means (TKJEL and NO_2NO_3N) are relatively high regardless of season; winter-954 µg/l, spring-1122 µg/l, summer-1302 µg/l, and fall-959 µg/l. The highest CHLA mean occurred in the summer (15.4 µg/l) as compared to the means of 10.0 µg/l for fall, 6.0 µg/l for spring, and 3.6 µg/l for winter. DO means did not show the same seasonal patterns as CHLA means, instead they varied as follows: fall-7.4 mg/l, winter-6.9 mg/l, summer-5.2 mg/l, and spring-4.6 mg/l. The DO mean was the lowest during the spring when the Atchafalaya River flows were at their maximum levels.

TABLE 8. COMPARISON OF PARAMETER MEANS, RANGES, NUMBER OF OBSERVATIONS (N), AND STANDARD DEVIATIONS OF THE MEANS (SD) FOR THE LEVEED ATCHAFALAYA SYSTEM

Parameter	Winter	Spring	Summer	Fall
TP (µg/l)				
N*	59	79	80	80
MEAN	201	232	200	147
RANGE	49-860	68-474	6-1010	44-471
SD	127	86	173	81
OP (µg/l)				
N*	59	78	78	79
MEAN	75	81	45	41
RANGE	15-519	28-262	6-161	105-197
SD	76	46	33	32
NH_3N (µg/l)				
N*	59	80	80	80
MEAN	91	73	304	87
RANGE	40-263	20-158	25-610	20-312
SD	40	52	126	67
NO_2NO_3N (µg/l)				
N*	59	80	80	80
MEAN	252	370	268	280
RANGE	20-780	20-1500	20-830	20-770
SD	218	328	230	216

---

* N represents the number of sampling stations.

(continued)

TABLE 8. (Continued)

Parameter	Winter	Spring	Summer	Fall
TKJEL (µg/l)				
N*	59	79	80	79
MEAN	702	752	1034	679
RANGE	333-1600	400-1325	450-3600	240-15509
SD	227	206	515	267
N-P				
N*	59	79	80	79
MEAN	2.5	2.7	4.6	2.9
RANGE	0.4-14.9	0.1-8.1	0.4-48.3	0.3-8.7
SD	2.5	1.8	5.6	2.0
CHLA (µg/l)				
N*	77	77	70	74
MEAN	3.6	6.0	15.4	10.0
RANGE	0.13	0.6-22.3	0.6-100.5	1.4-36.9
SD	4.7	4.5	16.5	7.2
SECCHI (in)				
N*	77	80	69	78
MEAN	24	19	17	17
RANGE	4-163	4-44	1-36	4-96
SD	28	11	8	13
DO (mg/l)				
N*	77	80	75	77
MEAN	6.9	4.6	5.2	7.4
RANGE	2.6-10.5	1.1-8.1	1.8-11.2	1.8-11.2
SD	2.0	1.8	2.2	1.9
DOSAT (%)				
N*	77	79	73	74
MEAN	63	52	68	73
RANGE	24-100	13-89	24-156	18-103
SD	18	19	31	19
TALK (mg/l)				
N*	59	80	80	80
MEAN	67	79	110	111
RANGE	26-116	41-130	62-326	63-218
SD	19	18.9	44.9	28
PH				
N*	79	81	77	81
MEAN	7.2	7.2	7.5	7.4

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* N represents the number of sampling stations.

(continued)

TABLE 8. (Continued)

Parameter	Winter	Spring	Summer	Fall
RANGE	6.6-8.0	6.6-7.9	4.1-8.9	6.9-8.3
SD	0.3	0.2	0.6	0.3
TOC (mg/l)				
N*	24	81	80	68
MEAN	12.2	10.4	10.6	8.1
RANGE	5.1-25.3	5.2-25.0	2.6-5.1	1.7-13.3
SD	5.2	4.2	2.6	2.8
DOC (mg/l)				
N*	24	81	70	69
MEAN	8.5	7.0	4.9	4.2
RANGE	3.8-20.3	1.6-14.4	1.7-9.6	2.1-9.9
SD	4.2	2.6	1.6	1.3
POC (mg/l)				
N*	23	81	56	54
MEAN	4.5	4.3	5.7	4.4
RANGE	0.3-19.4	0.7-17.6	1.6-16.7	0.7-8.2
SD	3.8	2.9	2.3	1.8
TEMP °C				
N*	79	80	75	79
MEAN	10.9	21.2	30.0	15.5
RANGE	6.2-31.9	16.8-25.2	16.6-35.2	9.5-31.1
SD	3.3	1.6	3.3	3.5

* N represents the number of sampling stations.

Light penetration, as measured by SECCHI, was low throughout the four seasons of the year within the leveed Atchafalaya Basin system, although probably due to different reasons. SECCHI measurements are basically governed by suspended material. Suspended sediment loads generally increase as river discharge increases and decrease as flows decrease (USGS, 1977). Suspended material is composed of CHLA containing particles and non-chlorophyll _a_ bearing particles. In the summer season, the CHLA mean was high and flows were low, while in the spring the CHLA mean was low but flows were high. In the fall, the CHLA mean was moderate and flows were relatively moderate. No apparent differences were observed in SECCHI means between the four seasons.

TP mean values did vary somewhat between seasons, however, all mean seasonal values are relatively high. OP means are relatively high regardless of season but the mean values are lower during the summer and fall seasons. Mean N-P ratios were low (below 5) for all seasons.

The same basic seasonal trends which were described for the whole leveed Atchfalaya system can be detected in any of the sub-geographical areas which are contained within the leveed Atchafalaya Basin and are directly impacted by the Atchafalaya River (Atchafalaya Basin Floodway including Fordouche, Upper Belle River, Buffalo Cove, and Upper Flats). These trends can be summarized as follows:

1) total nitrogen and TP levels are relatively high during all seasons,

2) the seasonal NH_3N and CHLA concentrations dramatically increase in the summer as compared to other seasons,

3) DO and autotrophic production trends do not follow the same seasonal trends,

4) DO levels are generally depressed during the spring period when flows are at their maximum levels, and

5) TOC levels are relatively constant during all seasons.

EFFECTS OF STAGE HEIGHT VARIATIONS

Discharge of the Atchafalaya River shows considerable variation, both seasonally and annually (Figure 4). The average monthly discharge hydrography at Simmesport for the period of 1963-1971 indicates the seasonal variation in discharge rates for the Atchafalaya River. During the 9-year period, the average discharge for the Atchafalaya River at Simmesport was 4,799 cms (169,000 cfs). Discharges generally begin to increase in December and January and Crest in the period between April and early June. Then they normally drop off sharply to their seasonal lows in the late summer and early fall. The cycle nature of discharge controls the annual regime of flooding for the Atchafalaya Basin Floodway. A hydrograph for the Atchafalaya River at Simmesport is presented in Figure 13 which encompasses the time frame in which water samples were taken.

Data collected from the Atchafalaya Basin Floodway were divided into two groups according to the discharge of the Atchafalaya River at Simmesport. One group includes all data collected when the discharge of the Atchafalaya River at Simmesport was above 4,799 cms (169,000 cfs) while the other group includes all data below that discharge. Three separate periods were defined in which the flows at some time during the period fell below 4,799 cms. Period I occurred in 1974, period II occurred in 1975, and period III extended from the summer of 1976 through the winter of 1977 (Figure 13). Data are presented for high water and low water regimes for each eriod in Appendix D, followed by a summary which combines the three periods and provides parameter mean values for high and low water regimes for a given geographical area. However, no

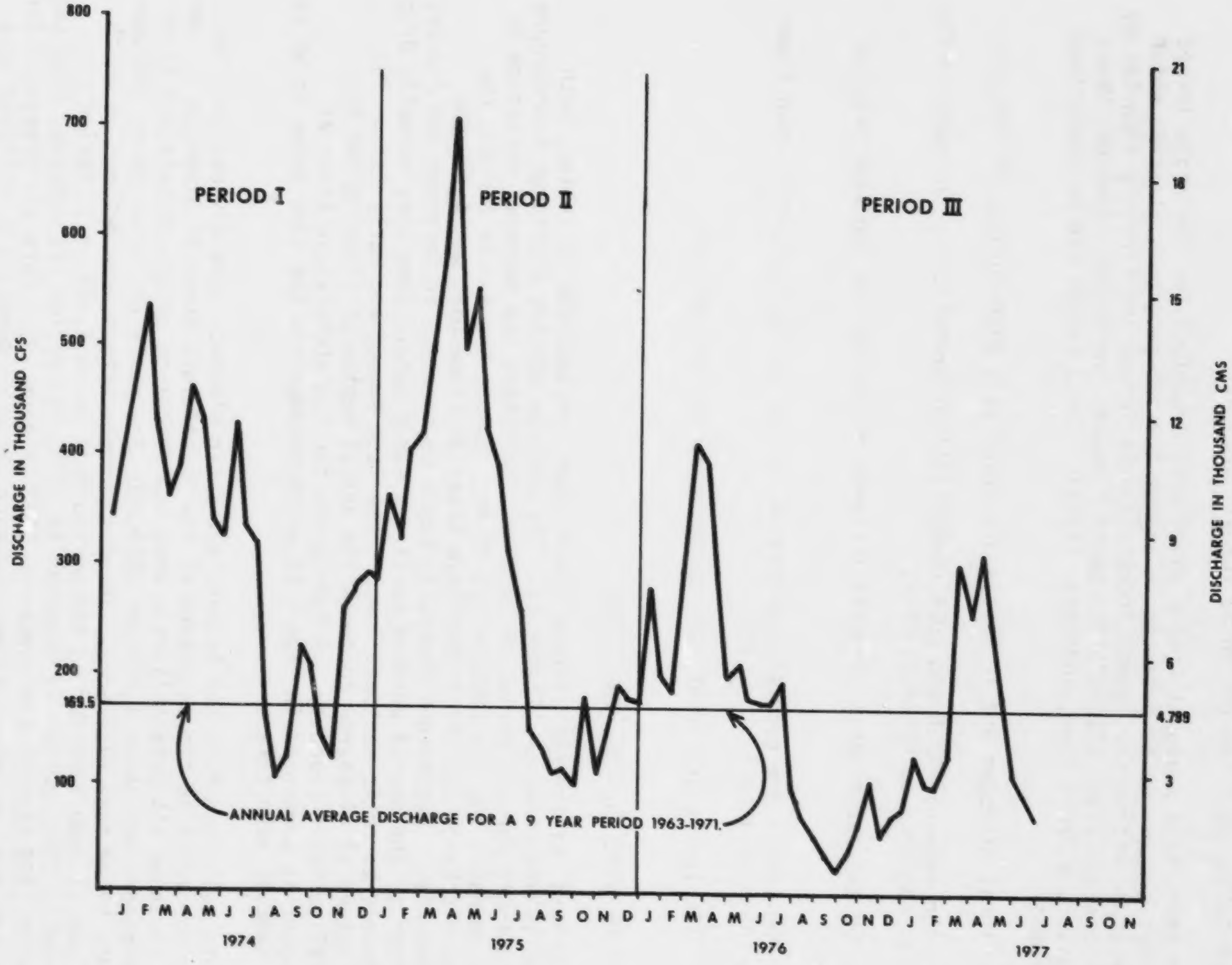

Figure 13. Discharge Hydrograph of the Atchafalaya River, Louisiana (1974-1977). Source: U.S. Geological Survey (1975, 1976, and 1977).

data were collected in period II (1975) for the low water regime. Also, for the low water regime during period I, only TEMP, pH, DO, SECCHI, and CHLA data are available. Mean parameter values for period III are presented in Table 9 for high and low water regimes for geographical areas subjected to wide fluctuations in stage height (i.e., the Atchafalaya Basin Floodway exclusive of Fordouche, Fordouche, Buffalo Cove, Upper Flats, and Upper Belle River).

Generally, TP, OP, NO_2NO_3N and SECCHI mean parameter values are lower during low water conditions than high water conditions, while the reverse is true for DO, DOSAT, TEMP, TALK, NH_3N, TKJEL, TOC, DOC, and POC. The Fordouche area, which receives water basically from the Atchafalaya River and from water entering through the Courtableau structure (located in the northwest corner of the area), provides a number of exceptions to the above stated generalities. Under low water conditions, a slight increase in the TP mean occurred (242 μg/l compared to 228 μg/l) and the SECCHI remained the same as compared to the high water regime. During low flows, this unit receives water only from the Courtableau area and the West Atchafalaya Floodway which had higher TP geographical means (229 and 270 μg/l) than other areas of the Atchafalaya Basin Floodway. DO and TOC means were lower under the low water regime.

The reduction of flow rates during the low water regime enhances the deposition of suspended materials with the resultant loss of a portion of TP from the water column. The magnitude of the reduction of the TP means between high and low water regimes is much greater for the Atchafalaya Basin Floodway, Buffalo Cove, and Upper Belle River areas than the Upper Flats area. Water, regardless of the stage height, must travel greater distances to reach the Upper Flats area than the Buffalo Cove or Upper Belle River areas. Therefore, a large proportion of TP may be lost through sedimentation before water enters the Upper Flats area.

The reduction in TP under low water conditions probably does not reflect the reduction in OP, but rather sedimentation of phosphorus-containing suspensoids. The increased CHLA and NH_3N levels suggest that the OP reductions result from transformation to biological particulates.

DISSOLVED OXYGEN

Mean nutrient levels (TP and total nitrogen) within the Atchafalaya Basin are great enough to support high levels of biological activity regardless of geographical area, season, or water level. However, dissolved oxygen levels can become critical in suporting the Basin's large populations of aquatic life. Because of the above considerations, DO concentrations are one of the most important gauges of the Basin's water quality and its ability to support a well-balanced aquatic fauna.

Insufficient DO in the water column can cause fish kills and/or anaerobic decomposition of organic material with concomitant releases of ammonia and other noxious gases such as hydrogen sulfide. However, before the onset of anaerobic conditions, DO levels become too low to provide for the maintenance and well-being of the fish population as a whole.

TABLE 9. PERIOD III PARAMETER MEANS UNDER HIGH AND LOW WATER CONDITIONS FOR SELECTED AREAS OF THE ATCHAFALAYA BASIN

	Atchafalaya Floodway*				Fordouche				Buffalo Cove				Upper Flats				Upper Belle River			
Parameter	High Water	(N)**	Low Water	(N)*	High Water	(N)**	Low Water	(N)**	High Water	(N)**	Low Water	(N)**	High Water	(N)**	Low Water	(N)**	High Water	(N)**	Low Water	(N)**
TP (µg/l)	244	(56)	173	(57)	288	(13)	242	(16)	304	(16)	256	(16)	118	(5)	104	(4)	223	(19)	122	(19)
OP (µg/l)	80	(56)	40	(57)	90	(13)	66	(16)	144	(16)	45	(16)	63	(5)	24	(4)	62	(19)	35	(19)
NH_3N (µg/l)	75	(57)	186	(57)	121	(13)	226	(16)	116	(16)	181	(16)	68	(5)	241	(4)	44	(19)	206	(19)
NO_2NO_3N (µg/l)	390	(57)	266	(57)	293	(13)	143	(16)	359	(16)	92	(16)	198	(5)	178	(4)	228	(19)	259	(19)
TKJEL (µg/l)	703	(56)	893	(57)	787	(13)	1145	(16)	764	(16)	1071	(16)	700	(5)	1181	(4)	650	(19)	699	(19)
N/P	2.4	(56)	4.0	(57)	2.6	(13)	1.8	(16)	2.5	(16)	1.8	(16)	3.2	(5)	4.5	(4)	1.6	(19)	4.4	(19)
SECCHI (in)	25	(57)	18	(57)	19	(13)	19	(16)	35	(16)	18	(15)	36	(5)	18	(4)	22	(19)	20	(19)
CHLA (µg/l)	7.4	(55)	14.3	(57)	4.4	(13)	13.8	(16)	10.5	(15)	16.3	(16)	2.8	(5)	19	(4)	8.9	(19)	12.4	(19)
DO (mg/l)	5.2	(56)	6.2	(57)	4.6	(13)	4.4	(16)	4.4	(15)	5.8	(15)	4.3	(5)	6.0	(5)	4.8	(19)	6.0	(19)
DOSAT (%)	55	(56)	72	(54)	50	(13)	49	(16)	47	(15)	63	(15)	47	(5)	79	(5)	49	(19)	68	(19)
TALK (mg/l)	77.7	(57)	103.4	(57)	68.3	(13)	93.3	(16)	87.2	(16)	111.3	(16)	83.3	(5)	98.9	(4)	72.5	(19)	97.3	(19)
PH	7.2	(57)	7.4	(56)	7.2	(13)	7.2	(16)	7.1	(16)	7.1	(16)	7.1	(5)	7.6	(5)	7.1	(19)	7.4	(19)
TEMP (°C)	17.2	(57)	23.1	(55)	17.6	(13)	24.1	(16)	17.5	(16)	21.7	(16)	17.6	(5)	27.5	(5)	18.0	(19)	22.8	(19)
TOC (mg/l)	8.3	(57)	9.7	(58)	12.8	(14)	12.3	(16)	9.0	(16)	11.4	(16)	8.1	(5)	10.1	(5)	7.4	(19)	8.1	(19)
DOC (mg/l)	4.6	(57)	6.2	(58)	10.0	(15)	7.7	(16)	5.1	(16)	6.7	(16)	6.2	(5)	7.8	(5)	4.3	(19)	6.0	(19)
POC (mg/l)	3.8	(56)	4.9	(53)	3.9	(14)	6.2	(15)	4.0	(16)	7.0	(14)	2.4	(5)	4.6	(4)	3.4	(19)	2.9	(19)

* Atchafalaya Basin Floodway exclusive of Fordouche.

**N = The number of stations sampled in a geographical area under high or low water conditions.

Many adult fish species can survive at low DO levels, even brook trout have been acclimated to less than 2 mg/l DO in the laboratory. The minimum concentration necessary for continued existence of a varied fish population in natural waters is not high. This minimum is not above 4 mg/l and may be much lower (National Academy of Science, 1973).

In considering DO levels, it is less important to know how long individual fish can withstand low-oxygen waters than to consider the effects of such conditions upon egg development, larval stages, normal growth and activity, and successful completion of reproductive cycles. These factors are key to the maintenance and well-being of the fishery resource as a whole.

Based upon extensive review of the available literature National Academy of Science (1973) stated, "any reduction of dissolved oxygen can reduce the efficiency of oxygen uptake by aquatic animals and hence reduce their ability to meet demands of their environment." There is evidently no concentration level or percentage of saturation to which the DO content of natural waters can be reduced without causing or risking some adverse effects on the reproduction, growth, and consequently the production of fishes inhabiting those waters. However, through acclimation, avoidance of extremely low DO conditions, and tolerance to short-term exposure, many species can survive adverse DO conditions (Carlander, 1977). Accordingly, no single, arbitrary, recommendation can be set for dissolved oxygen concentrations that will be favorable for all kinds of fish in all kinds of waters, or even one kind of fish in a single kind of water.

Fish do vary in their oxygen requirements by species, age, activity, and temperature as the following examples for key fish species of the Atchafalaya Basin illustrate. Critical levels of DO for largemouth bass at temperatures from 25°C to 35°C ranged from 0.92 to 1.4 mg/l in studies by Moss and Scott (1961). However, Stewart et al., (1967) reported that food consumption and food conversion to biomass are near their optimum at 7 and 5 mg/l respectively, at 26°C. Largemouth bass avoid water with 1.5 mg/l DO or less, and show some avoidance at 3 to 4.5 mg/l but do not avoid water at 6 mg/l DO at temperatures of 17°-22.5°C (Whitmore et al., 1960). Only when DO levels are above 3.5 mg/l did Dudley (1969) find largemouth embryo survival equal to controls. The channel catfish seems to be more tolerant than either the largemouth bass or the bluegill. They have been observed to survive at concentrations of 0.97 mg/l (Moss and Scott, 1961). However, Schmillon (1970), observed channel catfish to die in cages at DO levels of 2 mg/l at the surface and 0.5 mg/l at a depth of 3 feet. DO concentrations of 3.1 mg/l during summer months and 0.8 mg/l in the winter were found to be lethal to bluegill (Moore, 1942). Also, Moore observed that all bluegill survived for 24 hours under summer conditions (23°C) at DO levels of 3.4 mg/l. While crappie were found to avoid water where the DO was lower than 3.3 mg/l in Lake Texoma (Grinstead, 1969). Larimore (1957) found that the critical oxygen tension (the concentration of DO at which oxygen consumption declines abruptly) to be 3.6 mg/l at 20°C for warmouth. While the various fish species in the Atchafalaya Basin do not share a common DO level at which no deleterious impact can be measured, almost all aquatic life will show some impact of very low DO levels. National Academy of Science (1973) recomended a floor of 4 mg/l except in situations where the natural level of DO is less than 4 mg/l and points out that the "black water" draining swamps of the Southeastern United States naturally have low DO content.

DO levels of 2 and 4 mg/l were selected to compare conditions which may be detrimental to fish populations. The rationale for their respective selection is that a level of 4 mg/l or less maintained over a considerable period of time will impact growth and development of fish especially largemouth bass and white crappie, while a DO level of 2 mg/l or less will increase the negative impacts and can produce lethal conditions.

Appendix E presents the number of days mean DO concentrations were above and below the selected values (2 and 4 mg/l) by season and water level for all individual stations located within the Atchafalaya Basin Floodway including the Fordouche area. Only data for the Atchafalaya Basin Floodway and its subareas were included in Appendix E because the majority of the Basin's fisheries resources are located there, and they are the most subject to low DO concentrations. Appendix F presents DO daily means by station in mg/l, date collected, and season for the Atchafalaya Basin Floodway and its subareas; Buffalo Cove, Upper Flats, Upper Belle River, Grand Lake, and Fordouche.

Table 10 presents the ratio of the number of days mean DO concentrations were below 2 and 4 mg/l to the total number of days DO concentrations were measured by season and selected geographical area. Seasons of the year are designated as follows: winter (December 21 to March 20), spring (March 21 to June 20), summer (June 21 to September 20), and fall (September 21 to December 20).

Within the Atchafalaya Basin Floodway, the majority of DO problems, as defined by the 4 mg/l level, occurred in the spring (39 percent or 77/194) followed by the summer (29 percent or 19/164). Fall and winter seasons contained a lower percent of problems (11 percent or 13/117 and 12/106, respectively). The same general trend was observed for the following areas: Buffalo Cove, Upper Flats, and Upper Belle River. The more severe DO reductions (below 2 mg/l) were closely associated with the spring season. Within the Atchafalaya Basin Floodway, 27 of 40 mean DO observations below 2 mg/l occurred in the spring. No problems were detected within the Grand Lake area which is greatly influenced by the oxygen-rich water of the Atchafalaya River main stem.

As previously described, diversion of water per unit of area for the western and eastern segments of the Atchafalaya Basin Floodway suggest that the western segments receive roughly three times the amount of water as the eastern segments (van Beek, et al., 1978). The Buffalo Cove area is representative of the western segment while the Upper Flats and the Upper Belle River areas represent eastern segments of the floodway. No differences are apparent in the total percent of problems for these three areas at either 2 or 4 mg/l DO level. At the 2 mg/l DO level, the majority of the problems occurred in the spring in the Buffalo Cove and Upper Belle River areas while the Upper Flats experienced problems in the summer and spring.

TABLE 10. RATIO OF THE NUMBER OF DAYS MEAN DO CONCENTRATIONS WERE BELOW 2 AND 4 MG/L TO THE TOTAL NUMBER OF DAYS DO CONCENTRATIONS WERE MEASURED BY SEASONS AND SELECTED GEOGRAPHICAL AREA

Geographic Area	Selected Value (mg/l)	Season				Total
		Winter	Spring	Summer	Fall	
Atchafalaya Basin Floodway*	2	3/106 (2%)	27/194 (13%)	3/64 (4%)	7/117 (5%)	40/481 (8%)
	4	12/106 (11%)	77/194 (39%)	19/64 (29%)	13/117 (11%)	12/481 (25%)
Buffalo Cove	2	3/35 (8%)	8/38 (21%)	1/19 (5%)	2/26 (7%)	14/118 (11%)
	4	8/35 (22%)	19/38 (50%)	9/19 (47%)	3/36 (11%)	39/118 (33%)
Upper Flats	2	0/6 (0%)	3/20 (15%)	1/5 (20%)	0/8 (0%)	4/39 (10%)
	4	0/6 (0%)	11/20 (55%)	1/5 (20%)	0/8 (0%)	12/39 (30%)
Upper Belle River	2	0/41 (0%)	15/76 (19%)	0/21 (0%)	5/52 (9%)	20/190 (10%)
	4	3/41 (7%)	36/76 (47%)	8/21 (38%)	10/52 (19%)	57/190 (30%)
Grand Lake	2	0/3 (0%)	0/7 (0%)	0/2 (0%)	0/5 (0%)	0/17 (0%)
	4	0/3 (0%)	0/7 (0%)	0/2 (0%)	0/5 (0%)	0/17 (0%)
Fordouche	2	0/29 (0%)	13/58 (22%)	1/21 (4%)	3/46 (6%)	17/154 (11%)
	4	4/29 (0%)	13/58 (58%)	13/21 (61%)	5/46 (10%)	56/154 (36%)

* Atchafalaya Basin Floodway exclusive of Fordouche.

Within the Fordouche area, problems as defined by the 4 mg/l DO level, basically occurred in the spring and summer. However, the more severe problems as defined by the 2 mg/l DO level were basically restricted to the spring.

Table 11 presents the ratio of the number of days mean DO concentrations were below 2 and 4 mg/l to the total number of days DO concentrations were measured by water level and selected geographical area. Water levels are defined by a discharge of the Atchafalaya River at Simmesport of 4,799 cms (162,500 cfs) or greater for high water and below this discharge level for low water.

No differences are apparent in the percent of problems associated with either high or low water at the 2 or 4 mg/l DO values for the Atchafalaya Basin Floodway, Buffalo Cove, or Fordouche areas. The percent of problems which occurred at the 4 mg/l DO level was nearly equivalent for the Upper Flats and Upper Belle River areas for high and low water regimes. At the more restricted value of 2 mg/l DO, the Upper Flats experienced a higher percentage of problems under low water conditions while the Upper Belle River area had a higher percentage of problems under high water conditions.

Table 12 presents the ratio of the number days mean DO concentrations were below 2 and 4 mg/l to the total number of days DO concentrations were measured by season and water level for the Atchafalaya Basin Floodway exclusive of Fordouche. Water levels and seasons are used as previously defined.

Water levels are generally high in the Atchafalaya Basin Floodway during the winter and spring, and therefore most of the DO samples were collected during high water conditions for these seasons. However, in the winter water levels rise and they generally reach their peak flows in the spring. The flows then drop off sharply to their normal seasonal lows in late summer and early fall. In the summer most of the DO samples were collected under low and receding water conditions. Water levels are generally low but rising in the fall and nearly an equal number of samples were collected for low and high water conditions.

Two separate phenomena explain most of the conditions under which reduced dissolved oxygen levels exist within the Atchafalaya Basin Floodway. One is associated with high water levels when additional land areas containing herbaceous materials and forest litter are being flooded or drained (fall and spring, respectively). The other is associated with increased biological activity and receding flows of the summer sason. Wells and Demas (1977) also commonly found DO concentrations below 4.0 mg/l in swamp areas during low flow conditions when the water was warm.

During the fall, all of the DO problems were restricted to the high water conditions, even though a proportional number of samples were collected under high and low water conditions. This indicates that DO problems were not associated with the water cycle when it receded to its annual low in early fall but with the increased flows of late fall. Also, all DO problems were restricted to the high water period in the winter season.

TABLE 11. RATIO OF THE NUMBER OF DAYS MEAN DO CONCENTRATIONS WERE BELOW 2 AND 4 MG/L TO THE TOTAL NUMBER OF DAYS DO CONCENTRATIONS WERE MEASURED BY WATER LEVEL AND SELECTED GEOGRAPHICAL AREA

Geographical Area	Selected Value (mg/l)	Water Level				Total	
		High		Low			
Atchafalaya Basin Floodway	2	31/312	(9%)	9/164	(5%)	40/481	(8%)
	4	83/312	(26%)	38/169	(22%)	121/481	(25%)
Buffalo Cove	2	9/67	(13%)	5/51	(9%)	14/118	(11%)
	4	26/67	(38%)	13/51	(25%)	39/118	(33%)
Upper Flats	2	2/30	(6%)	2/9	(22%)	4/39	(10%)
	4	9/30	(30%)	3/9	(33%)	12/39	(30%)
Upper Belle River	2	19/133	(14%)	1/57	(1%)	20/190	(10%)
	4	39/133	(29%)	18/57	(31%)	57/190	(30%)
Grand Lake	2	0/11	(0%)	0/6	(0%)	0/17	(0%)
	4	0/11	(0%)	0/6	(0%)	0/17	(0%)
Fordouche	2	10/88	(11%)	7/66	(10%)	17/154	(11%)
	4	30/88	(34%)	26/66	(39%)	56/154	(36%)

* Atchafalaya Basin Floodway exclusive of Fordouche.

TABLE 12. RATIO OF THE NUMBER OF DAYS MEAN DO CONCENTRATIONS WERE BELOW 2 AND 4 MG/L TO THE TOTAL NUMBER OF DAYS DO CONCENTRATIONS WERE MEASURED BY SEASON AND WATER LEVEL FOR THE ATCHAFALAYA BASIN FLOODWAY EXCLUSIVE OF FORDOUCHE

Water Level	Value (mg/l)	Season Winter	 Spring	 Summer	 Fall	Total
High	2	3/92 (3%)	21/152 (13%)	0/3 (0%)	7/65 (10%)	31/312 (9%)
	4	12/92 (13%)	57/152 (37%)	1/3 (33%)	13/65 (20%)	83/312 (26%)
Low	2	0/14 (0%)	6/42 (14%)	3/61 (4%)	0/52 (0%)	9/169 (5%)
	4	0/14 (0%)	20/42 (47%)	18/61 (29%)	0/52 (0%)	38/169 (22%)
Total	2	3/106 (2%)	27/194 (13%)	3/64 (4%)	7/117 (5%)	40/481 (8%)
	4	12/106 (11%)	77/194 (39%)	19/64 (29%)	13/117 (11%)	12/481 (25%)

In the spring season the majority of the DO problems at either the 2 or 4 mg/l levels occurred. In fact, the more severe problems, as defined by the 2 mg/l DO level, are basically restricted to the spring season. Twenty-seven of the 40 observations below the 2 mg/l DO level were recorded in the spring with 21 of these observations being associated with high water.

Examination of station DO means (Appendix E) and unpublished data shows that most of the extremely low DO concentrations during high water conditions were at locations sheltered from extensive wind action or in areas with little or no water circulation due to man-made or natural obstructions. Turbulence at the water surface greatly increases the rate at which oxygen invades water from the atmosphere and replenishes that lost to decomposition. It is extremely important to provide for proper water circulation patterns in the overflow areas of the Atchafalaya Basin Floodway during high water periods in order to prevent large areas from having extremely low dissolved oxygen concentrations which would adversely impact resident populations of aquatic life.

The interaction of increased biological activity, as indicated by elevated levels of CHLA and NH_3N, and the reduced flows of oxygen-rich water apparently produced the DO problems associated with the summer season.

ENERGY-NUTRIENT CYCLES

Comparisons of mean productivity, respiration, phytoplankton and CHLA estimates, and carbon budgets, for areas inside and outside the leveed Atchafalaya system, indicate that autotrophic food chains dominate areas outside while bacteria-detritus food chains dominate those areas inside the system which experience prolonged overbank flooding (Hern and Lambou, in press). Earlier studies have also shown that these overflow areas have characteristics of bacteria-detritus food chains (Lambou, 1961; Lambou, 1962).

The key to the high productivity of the Atchafalaya Basin Floodway is the short, efficient, bacteria-detritus food chain. Given sufficient nutrients (nitrogen and phosphorus) and adequate dissolved oxygen levels, carbon becomes the lifeblood of this system. Prolonged overbank flooding, with the inundation of additional land areas containing herbaceous material and forest litter, renews the carbon resources needed to drive the bacteria-detritus system.

Bacteria utilize both particulate and dissolved organic matter. They are able to convert dissolved organic matter into particulate carbon (biomass) which is then available as a more important food source to higher forms. In addition to metabolizing the readily oxidizable forms of carbon (e.g. sugars, starches), they are able to eventually convert even the more recalcitrant forms of carbon (i.e. lignius, cellulose) into new biomass. Bacteria comprise a large percentage of the nutritive value of detrital material. A typical food chain in this system would be detritus to crawfish to largemouth bass. The high productivity of the Atchafalaya Basin Floodway is not due primarily to aquatic autotrophic production but rather to the bacteria-detritus food chain.

The organic compounds available for bacterial utilization which are present in the aquatic system are both physically and chemically heterogeneous. These organic constituents include a host of organic acids, polysaccharides, lignins, aromatic and aliphatic hydrocarbons, sugars, alcohols, amino acids, purines, pyrimidines, proteins, lipids and nucleic acids. The decomposition rate of organic materials is mainly dependent upon the chemical compound while temperature, pH, oxygen supply, available minerals and carbon:nitrogen ratios represent the chief environmental influences (Alexander, 1961).

N-P ratios are very low in the Atchafalaya Basin (3:1, Table 3) and would suggest severe nitrogen limitation for autotrophic production (Lambou et al., 1976). However, both organic and inorganic forms of nitrogen and phosphorus are biologically available to bacteria. Complete metabolism (mineralization) of carbon ($C_6H_{12}O_6$ $CO_2 + H_2O$) at optimal rates by bacteria requires carbon:nitrogen:phosphorus ratios of approximately 100:10:1 to 100:5:1 dependent upon bacterial community composition and environmental conditions (Alexander, 1961). In addition, many of the constituents of the total organic pool do not undergo rapid breakdown, e.g., lignins, cellulose and aromatic hydrocarbons, and therefore do not represent a significant drain upon the available nitrogen pool. Herbaceous material and leaf litter flooded during high water stages in the Basin contain sufficient nitrogen to support their breakdown by bacteria.

The mean nitrogen content of the Atchafalaya Basin waters which is biologically available to bacteria is 1.218 mg/l (0.905 µg/l of TKJEL + 0.313 mg/l of NO_2NO_3N) with total phosphorus in excess for bacteria metabolism (199 µg/l, Table 3). The amount of carbon which can be totally mineralized through bacterial action, given the mean Basin nitrogen and phosphorus levels, becomes a staggering 12 to 24 mg/l while the mean total organic carbon content of the Basin was only 10.6 mg/l. Sufficient nutrients, as indicated by the mean concentration of total phosphorus and nitrogen, are available regardless of the geographical area (Table 7), season (Table 8), or water level (Table 9) for complete bacterial utilization of the total organic carbon contained within the water column, even though Well and Demas (1977) state "concentrations of nitrogen and phosphorus compounds in the Atchafalaya River Basin are relatively low, generally less than 1,500 and 150 µg/l, respectively."

A computer search of all station-date combinations where carbon:nitrogen ratios exceeded 20:1 (100:5) for all stations contained within the Atchafalaya Basin Floodway including the Fordouche area was conducted to reveal under what environmental conditions nitrogen may be limiting. Only 5 of 470 possible station-date combinations revealed carbon:nitrogen ratios greater than 20:1.

Another computer search was conducted to reveal all station-date combinations where total phosphorus concentrations fell below 20 µg/l for stations contained within the Atchafalaya Basin Floodway including the Fordouche area. This concentration of phosphorus would allow for optimal rates of carbon breakdown by bacteria when 20 mg/l of carbon is available. No such station-date combinations were detected.

Therefore, under the vast majority (99 percent) of the environmental conditions found within the Atchafalaya Basin Floodway including the Fordouche area, sufficient nitrogen and phosphorus is available for bacterial metabolism of the organic carbon contained in the water column.

Naturally the processes involved in "largely autotrophic" and "largely bacteria-detritus" systems are not mutually exclusive. The best estimate of autotrophic system contributions to either bacteria-detritus or autotrophic food chains is represented by CHLA levels. The CHLA mean for the Atchafalaya Basin is approximately half (10 μg/l) of the mean for Louisiana lakes (19.3 μg/l) while the Atchafalaya Basin has higher TP and inorganic nitrogen mean concentrations (Table 3). Therefore, the low of CHLA production cannot be accounted for by low nitrogen and/or phosphorus levels. The apparent discrepancy between high nutrients and low CHLA levels in the Atchafalaya Basin is best addressed by examining SECCHI means. Light penetration, as measured by SECCHI, was approximately twice as high in Louisiana lakes and three times as high in southeastern lakes, on an average, as that in the Atchafalaya Basin. This suggests light penetration as the cause of the low CHLA production rather than low nutrient levels. The mean CHLA level in the leveed Atchafalaya system was 8.5 μg/l while the mean number of algal units per milliliter was nearly 35 times higher for waters outside the leveed system than within (Hern et al., 1978).

Seasonal fluctuations of NH_3N and DO are mediated by the bacteria-detritus food chain within the leveed Atchafalaya system. The NH_3N mean value dramatically rises during the summer months when the mean temperature value reaches its seasonal high. NH_3N mean values of 91, 73, 304, and 87 μg/l were calculated for winter, spring, summer, and fall, respectively while mean temperatures of 10.9, 21.2, 30.0, and 15.5 were recorded for the same respective seasons (Table 8). The NH_3N rise is probably due to increased bacterial action primarily associated with the bottom sediments during the warmer summer months.

The highest CHLA mean occurred in the summer (15.4 μg/l) as compared to means of 10.0 μg/l for fall, 6.0 μg/l for spring, and 3.6 μg/l for winter. One would expect the highest seasonal mean of dissolved oxygen during the summer season, when the highest autotrophic production, as indicated by CHLA levels, occurred. However, the second lowest seasonal DO mean (5.2 mg/l) was recorded during the summer season (Table 8). This is probably indicative of the increased oxygen requirements for bacterial metabolism associated with the bottom sediments in the warmer months. The lowest dissolved oxygen mean (4.6 mg/l) occurred in the spring when flows and stage heights normally reach their maxima. Associated with the spring increase of flows and stage heights are the inundation of areas containing new vegetation, leaf litter of the previous season(s), and other allocthonous inputs. These additional sources of carbon stimulate bacterial action with a resultant decrease in the mean DO concentration during the spring. By comparison, highest seasonal means for DO occurred in the fall and winter, 7.4 and 6.9 mg/l, respectively.

Manifestations of the bacteria-detritus food chain in those areas which are impacted by prolonged overbank flooding, e.g. the Atchafalaya Basin Floodway (exclusive of Fordouche), Fordouche, Upper Flats, Upper Belle River, and Buffalo Cove reflect nutrient variation in relation to water level fluctuations. Under low water conditions, OP and NO_2NO_3N mean values are reduced while CHLA, TEMP, NH_3N, TKJEL, TOC, and DOC means increase relative to high water levels (Table 9). Increased bacterial and phytoplankton activity, as indicated by elevated means for DOC, NH_3N, and CHLA occurs with the higher temperatures associated with low water levels. The increased biological activity associated with low water periods may account for the corresponding reduction in OP and NO_2NO_3N.

A strong case has been made to support the fact that nutrients (nitrogen and phosphorus) are available at levels more than sufficient to support bacterial breakdown of organic matter found within the waters of the Atchafalaya Basin Floodway regardless of season, geographical area, or water level, and that major differences in the nature and level of productivity (e.g., bacteria-detritus vice autotrophic production) are mediated by the regimes of periodic overflow. However, the overflow type of regimes now existing must be maintained in the Atchafalaya Basin Floodway in order to maintain the bacteria-detritus food chain upon which the high productivity of aquatic life is dependent.

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APPENDIX A. STATION PARAMETER MEANS

This appendix was generated by computer. Because of this it was necessary to print alphabetic characters in upper case without subscripts and parameter values are given to eight decimal places. Parameter means are presented for each station with the number of days sampled (N), standard deviation of the station mean, and minimum and maximum daily mean value for each station.

Values for TP, OP, NH_3N, NO_2NO_3N, TALK, TKJEL, DO, TOC, DOC, and POC are given in mg/l; TEMP is given in degrees Celsius; PH in standard units, SECCHI in inches; CHLA in μg/l; and DOSAT in percent, while N-P is a unitless ratio.

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                         ATCHAFALAYA STATION MEANS FOR ALL YEARS
                                     STATION=A001
VARIABLE     N          MEAN          STANDARD         MINIMUM          MAXIMUM
                                      DEVIATION         VALUE            VALUE

TP          19      0.21791579      0.11043636      0.08540000       0.41433333
OP          18      0.04105185      0.01705466      0.01100000       0.08800000
NH3N        18      0.09064815      0.06053449      0.02000000       0.26000000
NO2NO3N     18      1.07762963      0.58644912      0.02000000       2.02000000
TALK        18     96.93518519     29.83643531     63.00000000     192.66666667
TKJEL       19      0.70000000      0.34623192      0.20000000       1.40000000
TEMP        18     14.78712963      8.90810833      3.00000000      32.56666667
PH          20      7.51141667      0.40546460      6.30000000       8.00000000
SECCHI      16     11.56250000      9.03304120      4.00000000      33.00000000
CHLA        17     10.25611765      9.18208265      1.06500000      33.50000000
DO          18      9.05481481      1.66539961      4.86666667      11.30000000
DOSAT       16     89.75407809     13.84977600     51.01239156     110.40099093
TOC         17      8.35588235      4.52760430      3.00000000      18.61000000
DOC         14      3.02000000      1.65339278      0.70000000       7.10000000
POC         11      4.98181818      3.12820338      1.00000000       9.10000000
N_P         18      5.95851789      3.03419714      1.03846154      12.98850575

                                     STATION=A002
TP          20      0.24378333      0.13573242      0.08400000       0.58700000
OP          20      0.03776167      0.02109007      0.01600000       0.10133333
NH3N        20      0.12935833      0.09724353      0.04000000       0.41000000
NO2NO3N     19      0.25692105      0.12297669      0.11000000       0.55000000
TALK        20     65.87250000     34.02306978     23.00000000     137.20000000
TKJEL       20      0.70216667      0.23587655      0.50000000       1.50000000
TEMP        16     16.40343750      8.13191915      2.71000000      32.50000000
PH          18      7.44685185      0.30901376      6.90000000       7.94000000
SECCHI      16     12.22916667     26.37078034      2.00000000     110.66666667
CHLA        14      6.92164286      8.36859481      0.50000000      31.70000000
DO          15      6.29733333      2.59469765      2.80000000      11.66666667
DOSAT       14     62.82061540     21.48190603     27.67952693      99.23356232
TOC         15     12.26000000      4.47793639      6.48000000      23.20000000
DOC         14      5.58357143      3.59060228      1.60000000      13.60000000
POC         12      6.98833333      3.52830331      0.40000000      14.10000000
N_P         19      2.31801212      1.96753897      0.49403748       6.92307692

                                     STATION=A003
TP          12      0.10953611      0.03766478      0.06750000       0.18100000
OP          12      0.02746389      0.01132951      0.00933333       0.04420000
NH3N        12      0.14993056      0.11464617      0.02000000       0.34666667
NO2NO3N     12      0.83880556      0.36735194      0.17666667       1.66000000
TALK        12    108.56944444     37.09532277     67.00000000     176.66666667
TKJEL       12      0.52902778      0.20723950      0.25000000       0.90000000
TEMP        11     16.05296970      7.90821439      6.66666667      31.10000000
PH          11      7.56356061      0.19342171      7.23333333       7.88000000
SECCHI      11     34.63636364     66.23182426      9.00000000     233.00000000
CHLA         8      9.62825000      5.56743711      0.42600000      16.20000000
DO          10      7.73233333      2.26570135      3.39000000      10.24000000
DOSAT       10     79.11973077     16.29069828     46.19157659      95.15705495
TOC         11      9.81272727      4.92846648      6.23000000      23.80000000
DOC         11      3.66454545      3.08628373      0.30000000      11.80000000
POC          9      6.24555556      3.29292086      2.70000000      12.00000000
N_P         12      9.51806444      3.49005286      4.39506173      14.37500000

                                     STATION=A004
TP          12      0.09397917      0.02339041      0.05000000       0.12400000
OP          12      0.03806250      0.02160794      0.01000000       0.09300000
NH3N        12      0.12423611      0.11135044      0.02666667       0.33666667
NO2NO3N     12      0.81597222      0.33732493      0.54000000       1.79500000
TALK        12    108.81444444     30.10661172     55.27333333     155.75000000
TKJEL       12      0.46944444      0.14058560      0.30000000       0.73333333
TEMP        12     15.10673611      5.68735218      6.85000000      24.94333333
PH          13      7.62685897      0.22389651      7.19250000       7.95000000
SECCHI      10     16.90000000      7.66594199      8.00000000      30.00000000
CHLA         8      5.95600000      5.29386837      0.30000000      13.90000000
DO          10      8.03500000      2.16405041      3.20000000      10.56666667
DOSAT        9     79.19982127     16.85896400     39.52228141      94.86061152
TOC         11      6.73818182      3.31101440      2.80000000      15.50000000
DOC         11      3.60090909      1.71141143      1.58000000       7.50000000
POC          8      2.81250000      2.40099830      0.20000000       8.00000000
N_P         12     10.92649477      5.57233826      5.30997305      23.60000000
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                     ATCHAFALAYA STATION MEANS FOR ALL YEARS
                                 STATION=A005

VARIABLE      N         MEAN        STANDARD         MINIMUM          MAXIMUM
                                    DEVIATION          VALUE            VALUE

TP            0           .             .               .                .
OP            0           .             .               .                .
NH3N          0           .             .               .                .
NO2NO3N       0           .             .               .                .
TALK          0           .             .               .                .
TKJEL         0           .             .               .                .
TEMP          0           .             .               .                .
PH            0           .             .               .                .
SECCHI        0           .             .               .                .
CHLA          0           .             .               .                .
DO            0           .             .               .                .
DOSAT         0           .             .               .                .
TOC           2    17.25000000     5.30330086     13.50000000      21.00000000
DOC           2     9.20000000     0.70710678      8.70000000       9.70000000
POC           2     8.05000000     4.59619408      4.80000000      11.30000000
N_P           0           .             .               .                .

                                 STATION=B001

TP           14     0.26945238     0.10310733      0.11800000       0.46000000
OP           14     0.04009524     0.01288306      0.01400000       0.06200000
NH3N         14     0.09976190     0.09030304      0.02000000       0.39000000
NO2NO3N      14     0.79047619     0.36698321      0.37000000       1.70000000
TALK         14    78.66666667    18.64100801     49.00000000     110.00000000
TKJEL        14     0.77619048     0.80196645      0.30000000       3.50000000
TEMP         13    14.79846154     7.37974814      5.00000000      31.70000000
PH           14     7.57202381     0.24819018      7.20000000       7.90000000
SECCHI        9     5.33333333     2.00000000      3.00000000      10.00000000
CHLA         11     5.35090909     3.94713936      1.00000000      13.66000000
DO           14     8.21047619     2.01584275      3.60000000      11.33333333
DOSAT        13    81.77181059    15.67013536     41.83354136      99.01178541
TOC          14     9.08000000     3.26744078      2.80000000      16.20000000
DOC          12     4.38166667     1.88076306      1.40000000       7.60000000
POC           9     5.59888889     2.93725401      2.20000000       1.20000000
N_P          14     3.76525992     2.08954946      1.32978723       9.15254237


                                 STATION=B002


TP            4     0.17400000     0.04602173      0.15000000       0.24300000
OP            3     0.08200000     0.04309292      0.05000000       0.13100000
NH3N          4     0.13000000     0.12987173      0.03000000       0.32000000
NO2NO3N       4     0.82000000     0.47840011      0.38000000       1.50000000
TALK          4   115.50000000    36.41885950     94.00000000     170.00000000
TKJEL         4     0.70000000     0.45460606      0.20000000       1.30000000
TEMP          3    21.70333333    11.02148054     10.01000000      31.90000000
PH            3     7.65000000     0.27838822      7.40000000       7.95000000
SECCHI        1     8.00000000          .          8.00000000       8.00000000
CHLA          1    25.70000000          .         25.70000000      25.70000000
DO            3     8.32000000     1.80310843      7.20000000      10.40000000
DOSAT         3    93.91738034     7.19307798     86.16286094     100.37164264
TOC           3     5.89000000     1.88740563      3.95000000       7.72000000
DOC           3     2.66666667     0.83864971      1.70000000       3.20000000
POC           3     3.22333333     2.64983647      0.75000000       6.02000000
N_P           4     5.28792060     0.87468734      4.66666667       6.58436214

                                 STATION=B003

TP            2     0.17950000     0.10394470      0.10600000       0.25300000
OP            1     0.04700000          .          0.04700000       0.04700000
NH3N          1     0.36000000          .          0.36000000       0.36000000
NO2NO3N       1     0.40000000          .          0.40000000       0.40000000
TALK          1   145.00000000          .        145.00000000     145.00000000
TKJEL         1     2.00000000          .          2.00000000       2.00000000
TEMP          1     9.50000000          .          9.50000000       9.50000000
PH            2     7.80000000     0.14142136      7.70000000       7.90000000
SECCHI        1    12.00000000          .         12.00000000      12.00000000
CHLA          2    10.10000000    10.04091629      3.00000000      17.20000000
DO            2     9.40000000     1.97989899      8.00000000      10.80000000
DOSAT         1    97.68358057          .         97.68358057      97.68358057
TOC           3     7.19666667     1.51064004      5.80000000       8.80000000
DOC           6     4.16500000     1.23789741      2.60000000       6.30000000
POC           3     2.54000000     1.06056589      1.50000000       3.62000000
N_P           1     7.16981132          .          7.16981132       7.16981132
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                   ATCHAFALAYA STATION MEANS FOR ALL YEARS
                              STATION=C001

VARIABLE      N          MEAN        STANDARD        MINIMUM         MAXIMUM
                                    DEVIATION         VALUE           VALUE

TP           11    0,30103030      0.19313146      0.13033333      0.81800000
OP           11    0,11910606      0.05949883      0.02433333      0.19150000
NH3N         11    0,18909091      0.12762383      0.06750000      0.50333333
NO2NO3N      11    0,18333333      0.13874287      0.02333333      0.42000000
TALK         11  111,56818182     49.17335856     60.25000000    232.50000000
TKJEL        11    1,05909091      0.31566628      0.60000000      1.66666667
TEMP         11   18,09484848      5.96813535     10.76750000     29.22666667
PH           11    7,21992424      0.42904585      6.45000000      7.73333333
SECCHI       10   12,30000000      4.80855719      8.00000000     24.00000000
CHLA          8   10,25600000     10.93052444      0.20000000     30.90000000
DO           10    4,63291667      1.60192358      2.13333333      6.93333333
DOSAT        10   50,58392266     17.07558938     23.11229158     75.58178520
TOC           5   19,84200000      7.69677335     12.60000000     30.40000000
DOC           5    9,06800000      4.05511036      5.24000000     14.84000000
POC           5   10,77400000      6.54233750      6.50000000     22.20000000
N_P          11    1,64328744      1.30831166      0.45192308      4.72813239

                              STATION=C002

TP            8    0,24789583      0.12483560      0.13050000      0.49900000
OP            8    0,11254167      0.08342284      0.02066667      0.23733333
NH3N          8    0,20833333      0.12454043      0.10000000      0.45000000
NO2NO3N       8    0,12250000      0.11621682      0.02333333      0.35500000
TALK          8   64,16666667     34.54615041     26.00000000    118.00000000
TKJEL         8    1,11250000      0.30194475      0.55000000      1.46666667
TEMP          8   16,60250000      6.31897866     10.01000000     29.06666667
PH            8    6,86708333      0.51047888      5.98333333      7.60000000
SECCHI        8   18,50000000      6.90755280     10.00000000     33.00000000
CHLA          4    8,76500000      6.88996130      0.20000000     17.00000000
DO            7    4,08857143      1.02253653      2.60000000      5.70000000
DOSAT         7   42,46801751     10.31813067     26.77992601     57.27437957
TOC           4   15,42750000      5.18893293     12.05000000     23.00000000
DOC           4   10,98500000      6.04567890      6.04000000     19.80000000
POC           4    4,44250000      1.59161082      2.95000000      6.02000000
N_P           8    1,76762761      1.33071838      0.55954089      3.67816092


                              STATION=C003


TP            6    0,27575000      0.07158400      0.20400000      0.39450000
OP            6    0,13000000      0.07686417      0.03500000      0.21400000
NH3N          6    0,11666667      0.07534366      0.06000000      0.26000000
NO2NO3N       6    0,16166667      0.13147877      0.05000000      0.41000000
TALK          6  110,33333333     49.03332200     57.00000000    176.00000000
TKJEL         6    1,14166667      0.15625833      0.85000000      1.30000000
TEMP          5   17,63500000      8.59701256      9.97500000     31.70000000
PH            5    7,16400000      0.40556134      6.60000000      7.70000000
SECCHI        5   11,00000000      4.06201920      6.00000000     17.00000000
CHLA          4    6,73925000      6.31612452      0.55700000     13.40000000
DO            5    5,20400000      1.36311408      3.60000000      7.10000000
DOSAT         5   54,83793998     10.51641362     37.88302708     64.95109477
TOC           3   13,60333333      3.72910624     10.67000000     17.80000000
DOC           3    7,12000000      3.70692595      4.93000000     11.40000000
POC           3    6,48333333      0.88793769      5.64000000      7.41000000
N_P           6    1,10446302      0.80356226      0.43650794      2.22222222

                              STATION=C004

TP           15    0,37814778      0.42764637      0.12100000      1.89000000
OP           15    0,12263333      0.07209929      0.02100000      0.28300000
NH3N         15    0,22748889      0.24843251      0.06000000      1.03000000
NO2NO3N      15    0,12462222      0.10889013      0.02333333      0.41666667
TALK         15  114,27444444     42.13246819     53.66666667    180.50000000
TKJEL        15    0,94855556      0.22450905      0.45000000      1.36666667
TEMP         14   19,88385714      6.29299274      9.87666667     30.83333333
PH           14    7,22895238      0.29561522      6.53666667      7.85000000
SECCHI       13   13,38461538      6.78894274      8.00000000     32.00000000
CHLA         11    8,04181818      9.09726859      0.65500000     27.30000000
DO           14    4,26333333      1.98246630      1.20000000      8.90000000
DOSAT        14   46,17701272     18.49692095     14.89199303     92.05624664
TOC           6   17,95833333     13.03641272     10.44000000     43.69000000
DOC           8    8,71000000      4.36210631      4.53000000     16.74000000
POC           5   10,47600000      9.27861412      5.13000000     26.95000000
N_P          15    1,14828290      0.64951647      0.41841004      2.50783699
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ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=C005

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	10	0.11035000	0.08493986	0.06100000	0.34400000
OP	10	0.03405000	0.01932104	0.01200000	0.08100000
NH3N	10	0.03833333	0.02838231	0.02000000	0.11333333
NO2NO3N	10	0.03850000	0.04661008	0.02000000	0.17000000
TALK	10	75.11666667	8.25670323	64.00000000	91.00000000
TKJEL	10	0.69833333	0.19010231	0.40000000	0.90000000
TEMP	9	20.38888889	8.08214613	11.13000000	35.15000000
PH	9	7.37500000	0.49112117	6.66000000	8.17500000
SECCHI	9	25.88888889	7.78531381	8.00000000	36.00000000
CHLA	6	10.79983333	5.18704349	3.80000000	16.90000000
DO	9	7.85111111	2.66054715	2.80000000	10.76000000
DOSAT	9	87.83156811	32.89289042	35.55130994	153.30169284
TOC	3	10.03333333	0.64291005	9.30000000	10.50000000
DOC	3	6.87666667	2.42768065	4.23000000	9.00000000
POC	3	3.15666667	2.53093527	1.50000000	6.07000000
N_P	10	0.67310305	0.16652506	0.36885246	0.90225564

STATION=C007

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	9	0.25316667	0.10519030	0.11800000	0.42266667
OP	9	0.10425000	0.06081809	0.03800000	0.19300000
NH3N	9	0.13268519	0.11277419	0.05333333	0.42000000
NO2NO3N	9	0.10725926	0.05878250	0.02200000	0.18000000
TALK	9	108.66666667	73.87978223	43.00000000	276.00000000
TKJEL	9	0.88425926	0.13670505	0.65000000	1.02500000
TEMP	7	19.64404762	7.95922874	10.06666667	29.25000000
PH	9	7.32129630	0.25190631	6.96666667	7.70000000
SECCHI	8	10.37500000	7.13016730	4.00000000	26.00000000
CHLA	9	7.45666667	8.48568942	0.20000000	26.50000000
DO	6	5.41666667	2.76290909	2.40000000	9.00000000
DOSAT	4	45.63495047	8.87923558	37.56718591	55.01298184
TOC	9	14.91222222	5.85852323	9.02000000	26.90000000
DOC	10	9.86200000	5.87218453	4.36000000	23.40000000
POC	8	4.80625000	1.83500049	1.60000000	7.80000000
N_P	9	1.09514079	0.88819560	0.36585366	3.20217096

STATION=C008

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	12	0.32278889	0.13406393	0.13866667	0.51900000
OP	12	0.10979167	0.04816827	0.05500000	0.21733333
NH3N	12	0.17580556	0.12974026	0.03000000	0.39000000
NO2NO3N	12	0.41291667	0.25557830	0.05000000	0.94000000
TALK	12	148.23888889	112.88622129	42.33333333	450.00000000
TKJEL	11	0.87272727	0.21085444	0.50000000	1.26666667
TEMP	8	19.20833333	7.32433431	10.83333333	28.50000000
PH	10	7.42175000	0.17551267	7.15000000	7.75000000
SECCHI	9	8.88888889	4.25571511	4.00000000	14.00000000
CHLA	7	2.87142857	2.16395031	0.90000000	5.90000000
DO	8	6.90833333	2.15669868	2.80000000	8.80000000
DOSAT	6	67.54269156	17.19774563	40.78468543	90.26686433
TOC	9	10.74333333	2.92314471	8.30000000	17.90000000
DOC	10	5.47800000	2.08279086	2.90000000	9.90000000
POC	8	5.16000000	2.09642553	1.80000000	8.00000000
N_P	12	2.21939889	1.71253449	0.74468085	5.98557692

STATION=D001

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	9	0.34304630	0.08722370	0.24700000	0.53133333
OP	9	0.13711111	0.08361835	0.06450000	0.32900000
NH3N	10	0.13766667	0.06607235	0.07000000	0.28000000
NO2NO3N	10	0.30016667	0.21968615	0.07000000	0.78000000
TALK	10	114.92500000	50.24993781	55.00000000	199.00000000
TKJEL	9	1.08333333	0.34751099	0.76666667	1.90000000
TEMP	10	18.52450000	7.51100477	9.01333333	31.35000000
PH	9	6.85444444	1.35481856	3.40000000	7.80000000
SECCHI	9	7.44444444	1.33333333	6.00000000	10.00000000
CHLA	8	7.41887500	5.09141057	0.90000000	15.60000000
DO	10	6.47733333	2.39868318	2.54000000	11.60000000
DOSAT	10	68.59959709	20.30224414	34.42093998	106.17907284
TOC	5	18.98000000	8.23211091	11.84000000	29.89000000
DOC	5	7.97200000	1.88162696	5.70000000	10.82000000
POC	5	11.00800000	6.72353107	4.40000000	19.07000000
N_P	9	1.07752800	0.35179969	0.72580645	1.81818182

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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                                STATION=E001
VARIABLE      N          MEAN          STANDARD         MINIMUM          MAXIMUM
                                       DEVIATION         VALUE            VALUE
TP           13       0.23842308      0.05927543      0.11000000      0.33800000
OP           13       0.10638462      0.05010121      0.02400000      0.17750000
NH3N         13       0.16423077      0.09036606      0.09000000      0.37000000
NO2NO3N      13       0.18923077      0.14410422      0.03000000      0.49000000
TALK         13      97.19230769     33.10056549     50.00000000    159.00000000
TKJEL        13       1.01153846      0.20428110      0.50000000      1.25000000
TEMP         14      20.28000000      6.57713054     10.35000000     31.43000000
PH           14       7.23392857      0.29244446      6.63000000      7.80000000
SECCHI       14      12.78571429      6.14164312      5.00000000     30.00000000
CHLA         11      15.92263636     16.66523036      0.39300000     45.70000000
DO           14       4.59714286      2.06131933      2.00000000      8.80000000
DOSAT        14      50.51842959     20.03597481     24.69196008     93.17112590
TOC           6      12.59333333      5.64732739      4.69000000     21.40000000
DOC           5       9.26000000      3.92270952      4.79000000     13.70000000
POC           4       5.05250000      4.81482000      0.54000000     10.70000000
N_P          13       1.67160302      1.19498320      0.50847458      4.00000000
                                STATION=E002
TP           21       0.30200000      0.11161351      0.14800000      0.55933333
OP           21       0.13131746      0.06234563      0.04800000      0.30400000
NH3N         21       0.14690476      0.08620234      0.04250000      0.35666667
NO2NO3N      21       0.28484127      0.26171651      0.02000000      1.17000000
TALK         21      97.03174603     84.77977384     33.00000000    326.00000000
TKJEL        21       0.84841270      0.20661994      0.60000000      1.30000000
TEMP         20      19.48404167      6.70047732      8.36666667     29.60000000
PH           21       7.23722222      0.36134292      6.33800000      7.86666667
SECCHI       21      13.85714286     17.31267083      4.00000000     85.00000000
CHLA         19       5.00995614      6.18626544      0.30000000     23.04750000
DO           19       4.95105263      2.23670891      1.20000000      9.00000000
DOSAT        17      49.77351352     17.88829291     15.60322735     71.42898164
TOC          13      11.43307692      3.42718637      7.65000000     21.00000000
DOC          14       7.11500000      3.43276016      3.25000000     15.00000000
POC          12       4.57666667      2.46502935      1.50000000     11.20000000
N_P          21       1.64427744      1.27452918      0.28195489      4.11340206

                                STATION=E003

TP           11       0.22451515      0.09570779      0.09550000      0.40766667
OP           11       0.09228788      0.06030690      0.02800000      0.20766667
NH3N         11       0.16303030      0.15093563      0.02333333      0.54000000
NO2NO3N      11       0.22378788      0.18655367      0.04666667      0.60000000
TALK         11      92.93939394     34.05226969     50.33333333    157.66666667
TKJEL        11       0.87121212      0.26458468      0.50000000      1.40000000
TEMP         11      17.76212121      6.32124254     10.23333333     30.06666667
PH           11       7.17666667      0.29833985      6.65000000      7.85000000
SECCHI       11      12.81818182      5.03623236      4.00000000     22.00000000
CHLA          7       3.19657143      2.72360416      0.26200000      7.60000000
DO           11       4.30484848      2.10254680      0.86666667      6.96666667
DOSAT        11      44.61511547     19.20867365     10.56174541     70.32309122
TOC           5      11.68200000      0.85712893     10.45000000     12.43000000
DOC           5      10.43000000      3.31220470      6.23000000     14.20000000
POC           3       2.92000000      1.82337599      1.31000000      4.90000000
N_P          11       1.98887591      1.17585686      0.53691275      3.47079038
                                STATION=E004
TP           10       0.24978333      0.09866761      0.11333333      0.40166667
OP           10       0.11241667      0.05070304      0.03166667      0.20500000
NH3N         10       0.11983333      0.11127890      0.03000000      0.41000000
NO2NO3N      10       0.14150000      0.12464381      0.02000000      0.34000000
TALK         10      90.68333333     42.20236741     48.00000000    191.00000000
TKJEL        10       0.75500000      0.19595445      0.40000000      1.03333333
TEMP         10      18.01066667      5.17951325     10.90333333     28.85000000
PH           10       6.94616667      0.37991719      6.40000000      7.80000000
SECCHI       10      25.00000000     20.37972849      9.00000000     72.00000000
CHLA          7      12.06085714     17.33327856      0.40000000     48.96300000
DO           10       3.26666667      2.55801814      0.53333333      7.80000000
DOSAT        10      35.08859718     27.24279895      6.48140486     79.71903670
TOC           7      14.64857143      3.84290007      7.71000000     19.30000000
DOC          10      10.23700000      5.03324514      3.30000000     17.30000000
POC           5       4.00800000      2.05381840      2.00000000      7.20000000
N_P          10       1.27468999      1.18710416      0.15767635      3.82352941
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                 ATCHAFALAYA STATION MEANS FOR ALL YEARS
                              STATION=E005

VARIABLE       N          MEAN          STANDARD          MINIMUM          MAXIMUM
                                        DEVIATION          VALUE            VALUE

TP             8       0.20493750      0.09185020       0.11000000       0.40700000
OP             8       0.05918750      0.03588666       0.00900000       0.10750000
NH3N           8       0.11000000      0.11042127       0.04000000       0.37000000
NO2NO3N        8       0.08000000      0.09258201       0.02000000       0.28000000
TALK           8      69.62500000     22.07090845      40.00000000     108.00000000
TKJEL          8       1.13125000      0.48766023       0.70000000       2.10000000
TEMP           7      21.29142857      6.72998373      11.09000000      32.60000000
PH             8       6.97687500      0.37256771       6.50000000       7.52000000
SECCHI         6      27.00000000     16.68532289      14.00000000      58.00000000
CHLA           5      10.89720000      9.35965273       0.33000000      23.40000000
DO             7       3.54571429      2.20770512       1.60000000       8.00000000
DOSAT          6      31.77847961     12.07752626      18.29513745      46.44356498
TOC            4      12.83750000      6.99275995       7.70000000      22.96000000
DOC            5       6.74200000      2.19315298       4.29000000       9.70000000
POC            2      10.07000000      9.43280446       3.40000000      16.74000000
N_P            8       0.86230111      0.41219748       0.38793103       1.60891089

                              STATION=E006

TP             9       0.16748148      0.07097376       0.08100000       0.29533333
OP             9       0.06231481      0.03308600       0.00850000       0.10566667
NH3N           9       0.13500000      0.13823038       0.03500000       0.40500000
NO2NO3N        9       0.07555556      0.09180293       0.02000000       0.26000000
TALK           9      67.55555556     20.22838352      41.00000000     106.50000000
TKJEL          9       0.75925926      0.19438491       0.45000000       1.06666667
TEMP          10      19.72333333      5.65805860      11.11000000      31.65000000
PH            10       7.06450000      0.33853903       6.60000000       7.70000000
SECCHI         9      27.33333333     16.82260384      13.00000000      60.00000000
CHLA           6      13.01816667     14.06169848       2.30000000      40.80000000
DO            10       4.73266667      2.28044927       0.40000000       7.50000000
DOSAT         10      51.85239630     23.90927345       4.93839202      82.64002521
TOC            5      11.89800000      2.47746241       9.57000000      14.80000000
DOC            6       8.21500000      1.84952697       5.67000000      10.80000000
POC            4       5.12500000      2.59818526       2.20000000       8.09000000
N_P            9       1.27809545      1.11795556       0.47272727       4.04605263


                              STATION=E007


TP             6       0.36033333      0.30380169       0.11900000       0.96500000
OP             6       0.07783333      0.04134086       0.01900000       0.12500000
NH3N           6       0.13750000      0.18302322       0.04000000       0.51000000
NO2NO3N        6       0.15166667      0.20721165       0.02000000       0.53000000
TALK           6      68.41666667     21.56946144      36.00000000     101.00000000
TKJEL          6       1.30000000      1.13092882       0.75000000       3.60000000
TEMP           6      20.30333333      6.41107375      11.17000000      29.60000000
PH             5       7.15400000      0.23995833       6.90000000       7.42000000
SECCHI         5      17.20000000      7.66159252       8.00000000      25.00000000
CHLA           3       3.48366667      3.11984620       0.36100000       6.60000000
DO             6       4.23333333      1.94901685       1.60000000       6.60000000
DOSAT          6      47.15319893     21.03130912      19.81656337      73.67249194
TOC            5      11.29800000      2.05672555       9.20000000      14.63000000
DOC            4       7.17000000      3.40938900       3.10000000      11.30000000
POC            3       6.01666667      2.30612951       3.67000000       8.28000000
N_P            6       1.18559512      1.77683487       0.26229508       4.78991597

                              STATION=E008

TP            16       0.19741562      0.07733143       0.07200000       0.39900000
OP            16       0.06625208      0.04472676       0.02566667       0.19550000
NH3N          16       0.17826042      0.19332723       0.04000000       0.72000000
NO2NO3N       16       0.18985417      0.23838664       0.02000000       0.99000000
TALK          16      73.30000000     25.58270538      34.00000000     129.50000000
TKJEL         16       0.85000000      0.33076791       0.36666667       1.65000000
TEMP          18      20.22506173      6.91335928       8.40000000      32.10000000
PH            18       7.33577160      0.47483587       6.81000000       8.53333333
SECCHI        18      28.96527778     44.42930202       6.00000000     200.37500000
CHLA          14      17.40676984     12.77340334       3.10000000      41.00000000
DO            18       5.37083333      1.98513448       2.10000000       9.05666667
DOSAT         17      59.17093743     19.02064691      25.31102100      89.22685558
TOC            8      12.34375000      3.49449746       8.96000000      18.20000000
DOC            9       7.97666667      3.66892695       4.06000000      13.90000000
POC            6       5.01833333      1.58909303       3.66000000       8.15000000
N_P           16       2.24668512      2.29203066       0.26859504       9.11504425
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ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=E009

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	11	0.20901515	0.09375436	0.09433333	0.36300000
OP	11	0.07622727	0.04754789	0.01266667	0.17600000
NH3N	11	0.12196970	0.09584368	0.05666667	0.39333333
NO2NO3N	11	0.17598485	0.24192022	0.02000000	0.83666667
TALK	11	74.88636364	31.81566422	29.66666667	130.00000000
TKJEL	11	0.80984848	0.26206494	0.46666667	1.33333333
TEMP	10	18.02150000	6.97522270	6.06666667	31.13333333
PH	11	7.20333333	0.31667018	6.80000000	7.73333333
SECCHI	11	19.18181818	13.12111414	4.00000000	50.00000000
CHLA	7	9.91300000	13.13253937	0.40000000	31.90200000
DO	11	5.66439394	3.07730061	0.27500000	11.20000000
DOSAT	10	54.63178771	25.58402933	3.35147230	84.25492532
TOC	8	14.81000000	12.35653326	6.70000000	45.00000000
DOC	8	7.76125000	3.30418106	1.10000000	11.20000000
POC	7	8.08428571	12.68185430	1.00000000	36.50000000
N_P	11	2.03402025	2.67966267	0.43695381	9.57597173

STATION=E010

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	9	0.16277778	0.07003536	0.06166667	0.24600000
OP	9	0.05450000	0.03595203	0.01150000	0.11950000
NH3N	9	0.11907407	0.10980763	0.04500000	0.40000000
NO2NO3N	9	0.19555556	0.20921646	0.02000000	0.64000000
TALK	9	93.72222222	35.25551572	52.50000000	167.00000000
TKJEL	9	0.81111111	0.35959082	0.33333333	1.40000000
TEMP	8	19.76333333	6.85629036	11.51000000	32.50000000
PH	8	7.10145833	0.27131578	6.66666667	7.55000000
SECCHI	8	21.62500000	10.16910587	6.00000000	40.00000000
CHLA	5	4.04640000	3.74255919	0.72100000	10.50000000
DO	8	4.36750000	2.01420491	2.50000000	7.90000000
DOSAT	8	48.07051982	20.36059336	26.52280808	82.88436283
TOC	5	12.03600000	3.35948359	7.00000000	15.50000000
DOC	5	10.78400000	6.57436537	4.58000000	21.20000000
POC	3	5.00333333	3.11593218	2.34000000	8.43000000
N_P	9	2.58998424	2.29157772	0.27083333	7.14285714

STATION=E011

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	18	0.18396667	0.06448443	0.08366667	0.33300000
OP	18	0.06381111	0.03452418	0.01900000	0.13366667
NH3N	18	0.11025926	0.13158300	0.02333333	0.42800000
NO2NO3N	18	0.22201852	0.25537632	0.02000000	0.86000000
TALK	18	73.42592593	28.72857100	29.33333333	135.00000000
TKJEL	18	0.79351852	0.35212422	0.20000000	1.60000000
TEMP	19	18.18789474	7.14681404	6.50000000	32.00000000
PH	19	7.38352632	0.53470965	6.36666667	8.46666667
SECCHI	18	12.94444444	6.79508665	3.00000000	36.00000000
CHLA	14	8.85892857	8.04453891	0.30000000	28.30000000
DO	18	6.32500000	2.44208800	1.10000000	10.50000000
DOSAT	17	66.65710731	21.51530611	13.09436696	98.62454458
TOC	17	11.50235294	3.45988173	2.20000000	16.40000000
DOC	18	7.28666667	3.22000000	2.70000000	14.30000000
POC	14	4.44500000	1.95243339	2.10000000	8.04000000
N_P	18	2.17951854	2.22637882	0.13013013	7.76892430

STATION=E012

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	6	0.19866667	0.07785735	0.10250000	0.32800000
OP	6	0.04991667	0.02229892	0.02300000	0.08200000
NH3N	6	0.14000000	0.17739786	0.03500000	0.50000000
NO2NO3N	6	0.20000000	0.30494262	0.02000000	0.80500000
TALK	6	64.58333333	12.77660623	43.00000000	79.00000000
TKJEL	6	1.21666667	0.62102067	0.80000000	2.40000000
TEMP	4	19.93000000	7.83936222	11.42000000	30.40000000
PH	6	7.29083333	0.12650758	7.10000000	7.49500000
SECCHI	4	16.50000000	1.29099445	15.00000000	18.00000000
CHLA	2	8.98150000	9.78423653	2.06300000	15.90000000
DO	6	6.85333333	1.45830952	5.20000000	9.10000000
DOSAT	4	78.76895065	15.55600078	69.07389867	101.77720149
TOC	4	10.56500000	2.96370826	6.70000000	13.76000000
DOC	4	8.10750000	4.42539170	3.90000000	14.30000000
POC	3	4.17666667	2.66638957	2.48000000	7.25000000
N_P	6	2.17003511	3.01926429	0.43478261	8.19512195

ATCHAFALAYA STATION MEANS FOR ALL YEARS
STATION=E013

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	10	0.33544167	0.30924823	0.10600000	0.91975000
OP	10	0.09492500	0.07629931	0.01500000	0.27275000
NH3N	10	0.20516667	0.16752225	0.04666667	0.56500000
NO2NO3N	10	0.16625000	0.10062708	0.05000000	0.31000000
TALK	10	130.95000000	32.07168379	90.25000000	175.00000000
TKJEL	10	0.95750000	0.39550815	0.60000000	1.80000000
TEMP	10	18.52066667	4.99347267	11.23000000	28.70000000
PH	10	7.35983333	0.22778787	7.07500000	7.76666667
SECCHI	10	22.30000000	7.58727004	12.00000000	36.00000000
CHLA	7	5.47528571	4.93527617	0.42600000	12.30000000
DO	10	4.31000000	1.67816773	1.45000000	6.80000000
DOSAT	10	46.73722785	16.94783602	14.98410642	69.70280702
TOC	5	10.93600000	0.94415571	9.80000000	12.30000000
DOC	5	6.69600000	1.11293755	5.53000000	8.06000000
POC	5	4.24000000	1.35486162	2.40000000	5.41000000
N_P	10	1.73027385	1.12701105	0.43268738	3.56997972

STATION=E014

TP	6	0.22790556	0.06739545	0.13560000	0.32900000
OP	6	0.03703889	0.01262819	0.02600000	0.06040000
NH3N	6	0.10372222	0.09114102	0.02000000	0.28166667
NO2NO3N	6	0.81877778	0.45592795	0.07000000	1.40000000
TALK	6	85.92777778	23.00850487	62.00000000	112.40000000
TKJEL	6	0.53166667	0.17680812	0.24000000	0.70000000
TEMP	6	17.01777778	9.01353295	6.93000000	31.11666667
PH	5	7.66533333	0.17797628	7.50000000	7.96666667
SECCHI	5	9.20000000	3.34664011	5.00000000	13.00000000
CHLA	2	1.19400000	0.71559206	0.68800000	1.70000000
DO	6	7.00888889	2.49367793	2.80000000	10.52000000
DOSAT	6	74.35232664	23.90300343	32.35789900	97.83438602
TOC	4	8.99750000	2.71047813	6.30000000	12.74000000
DOC	5	3.97400000	1.87365418	2.32000000	6.60000000
POC	4	4.61000000	2.23454693	2.20000000	7.46000000
N_P	6	4.45371518	2.12376329	0.45592705	6.00823045

STATION=E015

TP	7	0.13157143	0.06626300	0.07200000	0.24480000
OP	7	0.05821429	0.06546491	0.01200000	0.19500000
NH3N	7	0.09071429	0.10725470	0.02000000	0.33000000
NO2NO3N	7	0.16428571	0.16863245	0.02000000	0.43500000
TALK	7	93.14285714	13.08215797	71.00000000	110.00000000
TKJEL	7	0.77142857	0.31997024	0.40000000	1.40000000
TEMP	7	19.86857143	7.00836507	11.22000000	32.00000000
PH	7	7.23214286	0.22393930	7.05000000	7.60000000
SECCHI	6	28.00000000	22.22611077	7.00000000	70.00000000
CHLA	5	2.35920000	1.84274068	0.71000000	5.20000000
DO	7	5.50000000	3.08274769	1.10000000	9.60000000
DOSAT	7	61.92140602	37.42810135	13.33045235	120.17196302
TOC	4	10.30250000	2.04907093	8.30000000	12.36000000
DOC	4	7.30750000	2.38290264	5.30000000	10.30000000
POC	3	4.49333333	1.65330981	3.00000000	6.27000000
N_P	7	2.54768291	2.41087641	0.20408163	5.89595376

STATION=E016

TP	7	0.10650000	0.02578759	0.07700000	0.14200000
OP	7	0.04357143	0.03108380	0.00900000	0.09300000
NH3N	7	0.09714286	0.11320546	0.03000000	0.35000000
NO2NO3N	7	0.16571429	0.15770301	0.02000000	0.39000000
TALK	7	92.57142857	14.30159831	73.50000000	118.00000000
TKJEL	7	0.69285714	0.26208868	0.40000000	1.20000000
TEMP	8	20.07750000	6.47486735	11.02000000	30.50000000
PH	7	7.46214286	0.66897843	6.95000000	8.90000000
SECCHI	5	33.60000000	16.92040189	7.00000000	50.00000000
CHLA	5	2.30960000	2.06574522	0.35500000	5.30000000
DO	8	5.10000000	2.55622490	0.70000000	9.00000000
DOSAT	8	57.37405881	30.09852761	8.59147894	96.32207640
TOC	3	8.81333333	2.19329281	6.30000000	10.34000000
DOC	3	7.94333333	4.51271906	2.90000000	11.60000000
POC	2	2.20500000	1.68998521	1.01000000	3.40000000
N_P	7	2.77250091	2.38975342	0.49295775	6.29870130

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                ATCHAFALAYA STATION MEANS FOR ALL YEARS
                           STATION=E017

VARIABLE      N        MEAN          STANDARD        MINIMUM        MAXIMUM
                                     DEVIATION        VALUE          VALUE

TP            6     0.16175000     0.09131251     0.07450000     0.29200000
OP            6     0.06366667     0.06489504     0.00400000     0.17850000
NH3N          6     0.05416667     0.02498333     0.02000000     0.09500000
NO2NO3N       6     0.16250000     0.16872315     0.02000000     0.42500000
TALK          6    92.75000000    12.72693993    73.50000000   107.00000000
TKJEL         6     0.66666667     0.17224014     0.40000000     0.90000000
TEMP          6    19.47333333     5.25354610    11.26000000    26.00000000
PH            7     7.23785714     0.23377085     7.00000000     7.60000000
SECCHI        5    32.60000000    23.02824353     7.00000000    70.00000000
CHLA          4     1.07250000     0.55331817     0.56800000     1.60000000
DO            6     5.05000000     1.43213128     2.50000000     6.20000000
DOSAT         6    56.02514388    16.29950465    30.32902939    75.13437181
TOC           4     9.88000000     2.87276870     5.60000000    11.60000000
DOC           4     7.49750000     1.88574256     5.09000000     9.60000000
POC           3     3.71000000     2.35025531     2.00000000     6.39000000
N_P           6     2.32819587     2.69870469     0.22471910     6.97986577

                           STATION=E018

TP            6     0.10700000     0.04059680     0.07200000     0.17000000
OP            6     0.03516667     0.02699753     0.00950000     0.08350000
NH3N          6     0.10583333     0.08114288     0.02000000     0.24000000
NO2NO3N       6     0.15777778     0.18450735     0.02000000     0.43666667
TALK          6    92.94444444    24.52247646    67.66666667   132.00000000
TKJEL         6     0.78888889     0.42238301     0.40000000     1.60000000
TEMP          7    19.58761905     7.61642711    10.26333333    32.30000000
PH            7     7.26857143     0.34241440     6.95000000     7.80000000
SECCHI        7    26.28571429    15.60677509    11.00000000    56.00000000
CHLA          4    23.47350000    27.67999053     0.29400000    60.00000000
DO            6     5.01944444     2.58707077     1.60000000     8.20000000
DOSAT         6    55.33036332    29.65100946    20.39948307    95.97855004
TOC           5     8.73400000     1.45891398     6.90000000    10.65000000
DOC           5     5.68200000     1.49504849     3.91000000     7.80000000
POC           5     3.05200000     2.63676317     0.30000000     5.94000000
N_P           6     3.32404242     3.14346352     0.23529412     7.73148148

                           STATION=E019

TP           11     0.11339394     0.04477588     0.06800000     0.22000000
OP           11     0.04007576     0.01765241     0.01300000     0.07033333
NH3N         11     0.07424242     0.07417458     0.02000000     0.28500000
NO2NO3N      11     0.32848485     0.26090064     0.02000000     0.88666667
TALK         11    88.16666667    18.88782677    63.66666667   125.00000000
TKJEL        11     0.58333333     0.20000000     0.35000000     1.00000000
TEMP         13    20.49897436     6.33777671    10.71000000    31.30000000
PH           13     7.13782051     0.41743672     6.68000000     8.10000000
SECCHI       13    24.76923077    15.88581047     6.00000000    60.00000000
CHLA         10     8.79680000    12.85791004     0.26100000    40.00000000
DO           12     4.53472222     2.41816002     1.15000000     8.90000000
DOSAT        12    50.00355017    24.80884260    15.01835883    89.73225527
TOC           6     7.79000000     2.06846803     5.90000000    10.59000000
DOC           6     5.43000000     1.87939352     3.80000000     8.90000000
POC           5     3.15200000     1.73163795     1.61000000     5.59000000
N_P          11     3.96127253     2.98767815     0.32128514    10.79545455

                           STATION=E020

TP           11     0.17437879     0.08151561     0.08266667     0.32500000
OP           10     0.06441667     0.04574380     0.02100000     0.16200000
NH3N         10     0.11266667     0.12500420     0.02000000     0.41500000
NO2NO3N      10     0.37183333     0.41253092     0.02000000     1.02500000
TALK         10    92.40000000    27.95788279    37.33333333   127.50000000
TKJEL        11     0.77878788     0.36347787     0.40000000     1.50000000
TEMP         12    20.98777778     6.81065555    11.33000000    31.20000000
PH           11     7.30045455     0.30721698     7.00000000     8.00000000
SECCHI       10    16.90000000    15.51665772     6.00000000    48.00000000
CHLA          9     8.10644444     7.30415180     0.63900000    18.60000000
DO           12     6.31944444     2.29525018     2.20000000    11.40000000
DOSAT        12    71.62603431    23.47655973    23.76426229   111.80089232
TOC           6    10.51666667     2.46282494     7.46000000    14.40000000
DOC           6     5.07666667     2.17771134     1.61000000     7.70000000
POC           5     5.34600000     2.94903035     1.04000000     8.10000000
N_P          10     3.88957491     4.24306042     0.16736402    11.65322581
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                  ATCHAFALAYA STATION MEANS FOR ALL YEARS
                              STATION=E021

VARIABLE      N         MEAN        STANDARD       MINIMUM        MAXIMUM
                                    DEVIATION       VALUE          VALUE

TP            7     0,14500000     0.10413133     0.05600000     0.36300000
OP            7     0,06840476     0.08312434     0.01200000     0.24066667
NH3N          7     0,09904762     0.12624879     0.02000000     0.38000000
NO2NO3N       7     0,07809524     0.06491753     0.02000000     0.19666667
TALK          7   107,00000000    24.12640324    77.00000000   152.50000000
TKJEL         7     0,69285714     0.34451484     0.35000000     1.20000000
TEMP          8    19,36708333     7.86153695     9.58333333    32.40000000
PH            8     7,10708333     0.23475375     6.79666667     7.40000000
SECCHI        8    25,00000000    14.33277961    10.00000000    80.00000000
CHLA          5     5,78620000     5.68235446     0.13100000    15.00000000
DO            6     2,77500000     1.22727114     1.40000000     4.70000000
DOSAT         6    29,99471505    12,01507587    16,54840755    46.55093726
TOC           5    10,61600000     1.96092580     7.50000000    12.70000000
DOC           5     6,58100000     3.08055271     4.54000000    12.00000000
POC           5     3,99800000     2.73815997     0.70000000     6.40000000
N_P           7     1,70232566     1.62333857     0.21120294     4.28571429

                              STATION=E022

TP            3     0,13616667     0.11862160     0.04400000     0.27000000
OP            3     0,02100000     0.01400000     0.01100000     0.03700000
NH3N          3     0,17000000     0.19287302     0.03000000     0.39000000
NO2NO3N       3     0,15333333     0.15947832     0.02000000     0.33000000
TALK          3    99,16666667    45.31647971    63.00000000   150.00000000
TKJEL         3     0,71666667     0.42524503     0.40000000     1.20000000
TEMP          3    19,80333333     8.89381995    12.80000000    29.81000000
PH            3     6,89000000     0.18520259     6.75000000     7.10000000
SECCHI        4    22,75000000     8.65544145    15.00000000    34.00000000
CHLA          1     6,50000000      .             6.50000000     6.50000000
DO            1     1,85000000      .             1.85000000     1.85000000
DOSAT         1    24,53276958      .            24.53276958    24.53276958
TOC           4    10,17750000     1.88719148     7.40000000    11.40000000
DOC           4     3,80250000     1.61836080     1.60000000     5.48000000
POC           3     6,55333333     0.86633327     5.80000000     7.50000000
N_P           3     2,47755331     1.74053911     1.13636364     4.44444444


                              STATION=E023


TP            7     0,12852381     0.08904137     0.03700000     0.27200000
OP            7     0,04480952     0.06078563     0.00750000     0.18000000
NH3N          7     0,07214286     0.09389077     0.02000000     0.28000000
NO2NO3N       7     0,15714286     0.30432791     0.02000000     0.84500000
TALK          7    98,23809524    22.16809877    58.00000000   126.00000000
TKJEL         7     0,55476190     0.20987525     0.33333333     0.90000000
TEMP          8    19,72395833     7.63800034    10,27666667    32.25000000
PH            7     7,17357143     0.31631622     6.71500000     7.60000000
SECCHI        8    34,12500000    24.74693343     5.00000000    66.00000000
CHLA          3     9,20000000     5.04777179     3.80000000    13.80000000
DO            3     6,86666667     2.40069434     4.10000000     8.40000000
DOSAT         3    75,76026933    16.95368554    56.19201993    86.03342142
TOC           5     8,40400000     1.94713379     5.45000000    10.15000000
DOC           5     5,71200000     2.82757316     2.93000000    10.10000000
POC           4     3,49000000     1.72954715     2.52000000     6.08000000
N_P           7     1,63970417     1.22786621     0.20220588     3.84444444

                              STATION=E024

TP           14     0,19096429     0.12785786     0.05600000     0.43650000
OP           14     0,03384524     0.03568472     0.00700000     0.14900000
NH3N         14     0,10476190     0.10802789     0.02000000     0.40000000
NO2NO3N      14     0,35095238     0.33087666     0.02000000     1.01000000
TALK         14    96,78571429    37.74229013    46.66666667   167.00000000
TKJEL        14     0,78333333     0.57333930     0.30000000     2.60000000
TEMP         16    16,08114583     6.95299207     5.42000000    30.30000000
PH           15     6,99311111     1.65626023     1.50000000     9.30000000
SECCHI       15     8,96000000     5.45590113     1.40000000    23.00000000
CHLA         11     9,18454545     5.66697338     0.85000000    20.30000000
DO           12     6,55555556     3,40262327     1.20000000    12.00000000
DOSAT        11    65,83480786    30.44431614    15.53491269   107.23671742
TOC          15     9,81800000     5.69617315     2.30000000    28.10000000
DOC          15     5,82200000     4.17250387     1.20000000    17.90000000
POC          12     4,41333333     2.81736283     1.10000000    10.20000000
N_P          14     3,23252524     2.76648971     0.09278351     8.34254144
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                 ATCHAFALAYA STATION MEANS FOR ALL YEARS
                             STATION=E025

VARIABLE    N          MEAN        STANDARD         MINIMUM          MAXIMUM
                                   DEVIATION          VALUE            VALUE
TP         10    0.15990000      0.17301081      0.04000000       0.61533333
OP         10    0.07155000      0.10894848      0.00550000       0.35633333
NH3N       10    0.13350000      0.14121267      0.02000000       0.45000000
NO2NO3N    10    0.33483333      0.26502556      0.02000000       0.71666667
TALK       10   87.21666667     19.35472157     64.00000000     131.50000000
TKJEL      10    0.58000000      0.21269420      0.30000000       1.00000000
TEMP       12   18.14194444      6.40677474      9.20000000      28.50000000
PH         11    7.03848485      0.27615762      6.60000000       7.48000000
SECCHI     12   39.83055556     79.70908654      4.30000000     290.66666667
CHLA        6   11.58833333      7.05036287      2.43000000      19.70000000
DO          6    4.51666667      3.33638194      1.86666667       9.80000000
DOSAT       6   45.23977212     29.64642558     20.99897074      88.00124231
TOC         7    8.86857143      0.97170689      7.24000000      10.01000000
DOC         8    5.29750000      1.46387695      3.89000000       7.70000000
POC         6    3.69833333      1.82371507      1.20000000       6.08000000
N_P        10    4.65792064      5.49766597      0.53333333      19.31972789

                             STATION=E026

TP         10    0.43033333      0.53039766      0.04150000       1.52000000
OP         10    0.23630000      0.34848643      0.01100000       0.98200000
NH3N       10    0.14316667      0.15499990      0.02000000       0.51666667
NO2NO3N    10    0.21416667      0.28514589      0.02000000       0.84333333
TALK       10   91.51666667     20.61529607     71.66666667     124.00000000
TKJEL      10    0.76000000      0.34419346      0.26666667       1.30000000
TEMP       11   18.35681818      5.90216766      9.40333333      29.15000000
PH         10    7.01325000      0.22701310      6.55000000       7.26666667
SECCHI     11   54.09090909    118.07663151      8.00000000     409.00000000
CHLA        6   27.63333333     36.15073190      2.50000000     100.50000000
DO          6    2.68333333      1.49825825      0.73333333       4.66666667
DOSAT       6   30.75068769     17.29575673      7.00252814      52.46401147
TOC         8   10.47000000      5.12826621      4.40000000      20.40000000
DOC         7    7.47857143      4.26497530      3.70000000      12.70000000
POC         6    4.71833333      3.21951808      0.10000000       8.10000000
N_P        10    2.31417413      2.94560829      0.10067114       8.19327731

                             STATION=E027

TP         10    0.12098333      0.08360421      0.05200000       0.34700000
OP         10    0.04756667      0.05628582      0.01100000       0.20233333
NH3N       10    0.07850000      0.07923418      0.02000000       0.29000000
NO2NO3N    10    0.35150000      0.31417583      0.02000000       0.85666667
TALK       10   88.48333333     16.39377517     71.66666667     127.00000000
TKJEL      10    0.60166667      0.27108037      0.30000000       1.00000000
TEMP       13   18.93153846      5.25942569      9.83000000      27.40000000
PH         11    7.02712121      0.33323840      6.40000000       7.60000000
SECCHI     13   18.84615385     11.08938046      7.00000000      47.00000000
CHLA       10    8.43666667      7.76779439      0.20000000      18.30000000
DO          4    4.91666667      3.23608131      2.00000000       9.00000000
DOSAT       4   53.10683544     32.66763213     22.77179845      91.39756608
TOC         3    7.44000000      3.56802466      4.30000000      11.32000000
DOC         4    5.35250000      2.41533124      2.30000000       7.60000000
POC         2    3.19000000      1.68291414      2.00000000       4.38000000
N_P        10    4.52048469      3.56800310      0.11527378       9.35000000

                             STATION=E028

TP         10    0.16931667      0.08349697      0.08900000       0.30550000
OP         10    0.05596667      0.05256224      0.00750000       0.17800000
NH3N       10    0.08500000      0.07668277      0.02000000       0.28500000
NO2NO3N    10    0.32100000      0.30156915      0.02000000       0.85333333
TALK       10   80.78333333     11.77883905     65.66666667      97.50000000
TKJEL      10    0.64833333      0.28223644      0.25000000       1.00000000
TEMP       13   19.13038462      6.67549444      9.91000000      31.70000000
PH         12    7.09638889      0.31645913      6.50000000       7.70000000
SECCHI     13   14.15384615      8.10191494      6.00000000      35.00000000
CHLA       12    9.44861111      7.31558271      0.60000000      20.00000000
DO          6    3.96388889      2.26181875      1.20000000       7.60000000
DOSAT       6   44.11680732     24.40553787     12.80823167      74.20257244
TOC         7    9.25571429      1.54225870      6.50000000      11.10000000
DOC         7    4.61714286      2.01894951      1.60000000       7.60000000
POC         6    5.59500000      1.15671518      4.60000000       7.80000000
N_P        10    3.51831846      3.38329263      0.17699115      10.22471910
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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                               STATION=E029

VARIABLE      N         MEAN          STANDARD         MINIMUM          MAXIMUM
                                      DEVIATION          VALUE            VALUE

TP            4     0.18091667      0.10160394      0.09000000       0.28000000
OP            4     0.03333333      0.00514242      0.02600000       0.03800000
NH3N          4     0.09625000      0.14918529      0.02000000       0.32000000
NO2NO3N       4     0.69416667      0.04157768      0.65000000       0.75000000
TALK          4    75.62500000     24.52677109     53.00000000      99.50000000
TKJEL         4     0.47500000      0.06454972      0.40000000       0.55000000
TEMP          7    17.72714286      8.60030844      9.29000000      32.90000000
PH            7     7.55714286      0.27869689      7.10000000       7.86666667
SECCHI        7     9.71428571      3.72890894      6.00000000      14.00000000
CHLA          6     5.41666667      5.38940318      0.70000000      15.60000000
DO            3     7.96666667      1.80954261      6.53333333      10.00000000
DOSAT         3    89.36954108     17.20926796     69.73370576     101.83025691
TOC           5     8.48200000      3.41965934      6.33000000      14.40000000
DOC           5     3.99800000      1.38953949      2.86000000       6.30000000
POC           5     4.48400000      2.10081651      2.90000000       8.10000000
N_P           4     5.85575959      3.75443887      2.54761905      10.37931034

                               STATION=E030

TP           15     0.20921111      0.10327601      0.09100000       0.40766667
OP           15     0.04067778      0.01814464      0.01300000       0.07050000
NH3N         15     0.09344444      0.08425553      0.02000000       0.27000000
NO2NO3N      15     0.42388889      0.40887072      0.01666667       1.40000000
TALK         15    85.93333333     23.26919757     49.66666667     118.66666667
TKJEL        15     0.71888889      0.35806284      0.20000000       1.80000000
TEMP         17    17.85750000      7.82564281      7.86666667      33.06666667
PH           17     7.22661765      0.55501130      5.61250000       8.30000000
SECCHI       14     9.09285714      5.26358525      1.30000000      22.00000000
CHLA         15     8.45361111      7.16058377      1.30000000      23.82666667
DO           12     7.44305556      2.20057911      1.60000000      10.50000000
DOSAT        12    79.00080276     24.17550548     20.59131406     127.66531947
TOC          17    11.60882353      5.50129290      5.10000000      22.10000000
DOC          16     6.16187500      4.37509043      1.40000000      19.10000000
POC          14     5.57714286      2.90939970      0.60000000      10.30000000
N_P          15     2.73991455      2.11215955      0.15247776       7.10382514


                               STATION=E031

TP           11     0.15967121      0.08156759      0.05900000       0.31141667
OP           11     0.04628636      0.03386385      0.00950000       0.13900000
NH3N         11     0.11742424      0.15218373      0.02000000       0.51000000
NO2NO3N      11     0.29198485      0.26993950      0.01933333       0.68500000
TALK         11    74.84393939     17.06273111     50.41666667     115.00000000
TKJEL        11     0.58696970      0.25545365      0.20000000       1.01666667
TEMP         13    16.34500000      7.56018273      7.78333333      28.30000000
PH           12     6.91979167      0.39411359      5.90000000       7.40000000
SECCHI       12    16.87500000     13.08386411      2.50000000      46.00000000
CHLA          7     7.03238095      6.03303919      2.20000000      19.30000000
DO            5     4.62666667      2.61402733      1.80000000       7.48333333
DOSAT         5    44.56561273     22.08246583     19.88566294      73.15430210
TOC          10     7.53000000      1.90866445      4.60000000      10.10000000
DOC           9     5.38444444      2.24983950      2.70000000      10.80000000
POC           8     2.60125000      1.68406343      0.50000000       5.62000000
N_P          11     3.05988306      2.49668874      0.14953271       6.77966102

                               STATION=E032

TP           17     0.17167647      0.10079756      0.06550000       0.40200000
OP           16     0.04900000      0.04038385      0.01300000       0.17450000
NH3N         17     0.11225490      0.11150010      0.02000000       0.45500000
NO2NO3N      16     0.43552083      0.32773392      0.02000000       1.05000000
TALK         17    78.00980392     20.74819860     44.00000000     118.00000000
TKJEL        17     0.61568627      0.22426350      0.20000000       0.90000000
TEMP         22    17.47075758      6.88635225      7.65000000      28.70000000
PH           22     7.13507576      0.37179440      6.35000000       7.80000000
SECCHI       21    13.57142857      8.93488348      2.00000000      36.00000000
CHLA         13     7.75807692      7.67387167      0.60000000      22.80500000
DO           13     6.12596154      2.67947237      0.80000000      11.20000000
DOSAT        13    62.68278418     23.31498596      9.84520855     101.30149096
TOC          11     7.76954545      2.89902437      0.98000000      13.50000000
DOC          13     5.01384615      2.92367502      2.20000000      14.00000000
POC           9     4.18611111      1.81151142      1.30000000       7.70000000
N_P          16     4.40409919      3.26277263      0.14234875       9.96309963
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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                               STATION=E033
VARIABLE     N         MEAN        STANDARD         MINIMUM          MAXIMUM
                                   DEVIATION         VALUE            VALUE

TP           7      0,34792857     0,35108337     0,08250000       1,01000000
OP           7      0,12778571     0.18255407     0.01000000       0.50000000
NH3N         7      0,07857143     0,11171818     0.02000000       0.33000000
NO2NO3N      7      0,15571429     0.20345820     0.02000000       0.54000000
TALK         7    134,14285714    44.26597102    80,00000000     204,00000000
TKJEL        7      0,81428571     0.52098807     0.20000000       1.80000000
TEMP         6     20,97000000     6.45363463     9.82000000      27.60000000
PH           7      7,14428571     0.30805071     6.80000000       7.70000000
SECCHI       4     38,00000000    31.80146747    10,00000000      75.00000000
CHLA         5      2,78140000     2,13693233     0.60000000       5.60000000
DO           5      4,32000000     3.40690475     1.70000000       8.10000000
DOSAT        4     35,01521869    25,87732654    20,99011643      73,81027595
TOC          3     13,66333333     3,97457335    10,70000000      18.18000000
DOC          2      9,15000000     0,49497475     8.80000000       9.50000000
POC          2      2,25500000     0.50204581     1.90000000       2.61000000
N_P          7      1,64396488     2,37446569     0,07836991       5,67307692

                               STATION=E034

TP           9      0,14940741     0.08412797     0,07350000       0.35000000
OP           9      0,06587037     0.07997373     0.01450000       0.24133333
NH3N         9      0,07037037     0.06786311     0.02000000       0.24500000
NO2NO3N      9      0,16259259     0.22994128     0.02000000       0.61000000
TALK         9    166,64814815    79.39097365    76.00000000     287.00000000
TKJEL        9      0,59074074     0.24862275     0.20000000       0.90000000
TEMP        10     20,36300000     7.89003097     9.79000000      30.90000000
PH          10      7,39266667     0.34515268     6.94333333       7.85000000
SECCHI      10     18,90000000    12.31485102    10.00000000      50.00000000
CHLA         5      8,86680000     9.91275598     0.99400000      25.40000000
DO          10      5,36066667     2.48109185     2,53333333       8.60000000
DOSAT       10     57,80976503    19,77045666    28,22186161      81,68278223
TOC          5     16,48400000    15.32777642     8.37000000      43.80000000
DOC          3      8,74000000     3.20356052     5.72000000      12.10000000
POC          3     11,68333333    17.36233951     0.70000000      31.70000000
N_P          9      1,97305368     2.23266255     0,23809524       6,36871508


                               STATION=E035

TP           9      0,29020370     0,21710529     0,08000000       0.77000000
OP           9      0,09662963     0.16026848     0.01100000       0.49000000
NH3N         9      0,19314815     0.27629549     0.03000000       0.89000000
NO2NO3N      9      0,27962963     0.35238648     0.02000000       0.90666667
TALK         9    126,96296296    42.26025334    67,66666667     175.00000000
TKJEL        9      1,23703704     0.91358489     0.30000000       3.10000000
TEMP         9     19,88907407     8.38562954     7.13500000      29.60000000
PH           8      7,37291667     0.33758450     6.90000000       7.80000000
SECCHI       7     16,57142857    19.89017465     4.00000000      59.00000000
CHLA         7     10,15814286    10.24566937     0.49700000      26.40000000
DO           8      6,54791667     2.91249957     3.20000000      11.20000000
DOSAT        8     70,03863638    21.38109182    36.39044859     100.08760293
TOC          5     13,33400000     2.68462847     9.41000000      16.50000000
DOC          4      7,40250000     1.98917697     5.80000000      10.00000000
POC          4      6,91250000     3.63258746     2.90000000      10.70000000
N_P          9      2,60136092     2,64237690     0,06493506       6,85567010

                               STATION=E036

TP           9      0,12135185     0,04497534     0,06200000       0.22200000
OP           9      0,03809259     0.02368575     0.00950000       0.09600000
NH3N         9      0,08814815     0.07168820     0.03000000       0.25000000
NO2NO3N      9      0,29444444     0.28010291     0.02000000       0.90666667
TALK         9     86,87037037    30,75550739    21,33333333     116.00000000
TKJEL        9      0,51296296     0.21518367     0.20000000       0.80000000
TEMP        10     18,37833333     7.57109631    10.46666667      32.90000000
PH          10      7,66416667     0.48376370     7.01000000       8.53500000
SECCHI      10     13,80000000     4.54116970     6.00000000      20.00000000
CHLA         5      7,65400000     6.98353635     0.71000000      18.00000000
DO          10      7,78000000     2.19180291     4.80000000      12.40000000
DOSAT       10     82,57964815    14.94977269    62.68532382     114.76063141
TOC          4      7,79750000     1.12458511     6.45000000       8.84000000
DOC          5      4,53200000     0.88731054     3.16000000       5.50000000
POC          4      3,90500000     1.43318992     2.17000000       5.68000000
N_P          9      3,57117154     3.38609387     0.61855670      11.00694444
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                ATCHAFALAYA STATION MEANS FOR ALL YEARS
                            STATION=E037

VARIABLE     N          MEAN        STANDARD         MINIMUM          MAXIMUM
                                    DEVIATION          VALUE            VALUE

TP           6    0.18033333      0.10960556      0.04900000       0.36100000
OP           6    0.03661111      0.01192088      0.01900000       0.05200000
NH3N         6    0.07666667      0.07118052      0.02000000       0.21000000
NO2NO3N      6    0.71500000      0.08029806      0.58000000       0.80000000
TALK         6   83.50000000     19.95188657     50.00000000     106.33333333
TKJEL        6    0.48888889      0.15587269      0.30000000       0.70000000
TEMP         7   16.70857143      8.67097732      7.20000000      31.80000000
PH           7    7.68333333      0.25000000      7.20000000       7.95000000
SECCHI       5    8.00000000      3.24037035      5.00000000      12.00000000
CHLA         4    9.45750000     10.34700722      2.33000000      24.70000000
DO           7    8.40952381      1.67641088      6.24000000      10.20000000
DOSAT        7   86.80646097     10.66677362     74.98949619      98.53199784
TOC          5    9.20400000      5.13271176      5.43000000      18.00000000
DOC          4    3.42000000      2.28017543      1.80000000       6.80000000
POC          4    5.92500000      3.88551584      2.89000000      11.20000000
N_P          6    6.23019467      4.50691870      2.27146814      14.89795918

                            STATION=E038

TP           8    0.21033333      0.11953654      0.06400000       0.39766667
OP           8    0.04706250      0.02443422      0.01700000       0.09300000
NH3N         8    0.09833333      0.09135662      0.02000000       0.31000000
NO2NO3N      8    0.79208333      0.37127382      0.37000000       1.60000000
TALK         8   71.04166667     34.34301181      3.00000000     101.00000000
TKJEL        8    0.57916667      0.22391715      0.20000000       0.90000000
TEMP         9   16.24481481      7.42571491      7.65333333      30.50000000
PH           9    7.65981481      0.32276845      7.30000000       8.35000000
SECCHI       9    7.33333333      2.34520788      4.00000000      11.00000000
CHLA         5    5.52500000      5.30271157      0.95000000      14.10000000
DO           9    8.35555556      1.24810968      6.80000000      10.20000000
DOSAT        9   86.40770168      9.83737524     69.16576120      98.99768963
TOC          5    8.89400000      6.30611449      1.90000000      18.90000000
DOC          4    4.10250000      2.45006633      2.37000000       7.60000000
POC          3    6.78333333      4.05657902      3.45000000      11.30000000
N_P          8    5.76565666      4.38879939      1.96982397      15.93750000

                            STATION=E039

TP           7    0.20304762      0.05914880      0.12700000       0.30250000
OP           7    0.03935714      0.01255227      0.02550000       0.06100000
NH3N         7    0.09285714      0.11979038      0.02000000       0.36000000
NO2NO3N      7    0.85500000      0.30784345      0.61000000       1.50000000
TALK         7   78.57142857     15.52979727     56.00000000     101.66666667
TKJEL        7    0.55238095      0.22840602      0.23333333       0.83333333
TEMP         8   16.33416667      8.93104479      5.90000000      32.43333333
PH           8    7.60416667      0.19570589      7.33666667       7.90000000
SECCHI       7   26.71428571     36.60015613      3.00000000      96.00000000
CHLA         4    6.05250000      3.88145484      1.41000000       9.50000000
DO           8    8.12083333      2.33128737      5.53333333      12.00000000
DOSAT        8   82.51183135     15.58047532     57.88836194      99.25748781
TOC          4    7.03500000      1.81720481      4.54000000       8.90000000
DOC          5    4.68800000      2.31930377      2.33000000       7.60000000
POC          3    3.08000000      1.65810132      1.87000000       4.97000000
N_P          7    4.90911661      1.80080097      2.79338843       7.65625000

                            STATION=E040

TP           3    0.15800000      0.10866922      0.07500000       0.28100000
OP           3    0.07000000      0.05271622      0.02300000       0.12700000
NH3N         3    0.13666667      0.14224392      0.04000000       0.30000000
NO2NO3N      3    0.10666667      0.04041452      0.07000000       0.15000000
TALK         3  120.33333333     39.62743158     95.00000000     166.00000000
TKJEL        3    0.96666667      0.63508530      0.60000000       1.70000000
TEMP         3   26.67000000      6.07261887     21.60000000      33.40000000
PH           4    7.65500000      0.59000000      7.20000000       8.52000000
SECCHI       4   14.50000000      8.58292879      4.00000000      22.00000000
CHLA         3   27.20000000     23.70717191      8.30000000      53.80000000
DO           4    4.35000000      2.78747197      1.60000000       8.20000000
DOSAT        3   68.30033587     39.80996822     41.91598504     114.09209860
TOC          1   10.16000000               .     10.16000000      10.16000000
DOC          1    5.41000000               .      5.41000000       5.41000000
POC          0             .               .               .                .
N_P          3    1.63344123      0.22250419      1.42348754       1.86666667
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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                                STATION=E041

VARIABLE      N          MEAN         STANDARD         MINIMUM          MAXIMUM
                                      DEVIATION         VALUE            VALUE

TP            9      0.13090741      0.05856739      0.05400000       0.22200000
OP            9      0.04438889      0.02369233      0.02200000       0.08400000
NH3N          9      0.11574074      0.16379211      0.03000000       0.54500000
NO2NO3N       9      0.20814815      0.25584344      0.02000000       0.85000000
TALK          9     90.85185185     26.40620777     57.66666667     141.50000000
TKJEL         9      0.59074074      0.17522032      0.35000000       0.85000000
TEMP         10     18.19516667      7.46879642      6.72500000      31.15000000
PH           10      7.12816667      0.33404872      6.56500000       7.70000000
SECCHI       10     27.90000000     23.78818568     10.00000000      87.00000000
CHLA          6      7.33866667      7.44653118      0.85200000      19.40000000
DO           10      3.97116667      2.75582190      1.00000000       9.20000000
DOSAT        10     40.76714721     25.22032384     11.91449765      86.81492162
TOC           5      9.74000000      3.01708469      4.80000000      12.40000000
DOC           4      5.73250000      4.46305856      2.48000000      12.30000000
POC           3      3.24000000      3.68711269      0.10000000       7.30000000
N_P           9      2.93348906      3.23413058      0.29585799      10.83665339

                                STATION=E042

TP            9      0.11455556      0.05979241      0.04800000       0.22600000
OP            9      0.03592593      0.02082235      0.01100000       0.06750000
NH3N          9      0.07981481      0.08495687      0.02333333       0.30000000
NO2NO3N       9      0.22111111      0.19263343      0.02000000       0.55000000
TALK          9     91.50000000     21.12117816     66.00000000     128.50000000
TKJEL         9      0.55000000      0.20480343      0.35000000       0.80000000
TEMP         10     19.32700000      7.74486344      6.46000000      31.10000000
PH           10      7.19766667      0.24229892      6.93333333       7.65000000
SECCHI       10     27.20000000     19.00760082     12.00000000      69.00000000
CHLA          6      8.94500000     10.27958705      1.41000000      26.90000000
DO           10      4.61533333      2.81392139      0.36666667       8.13333333
DOSAT        10     48.62491106     26.44431535      4.23130980      85.35479563
TOC           5      6.77200000      2.80753807      4.40000000      10.70000000
DOC           4      4.75250000      2.17870566      2.88000000       7.90000000
POC           3      3.18666667      2.91096777      1.04000000       6.50000000
N_P           9      3.30178508      2.41693803      0.38800705       6.95431472


                                STATION=E043


TP           11      0.10480303      0.05856230      0.03200000       0.24966667
OP           11      0.04839394      0.02751184      0.01100000       0.09833333
NH3N         11      0.11287879      0.14208192      0.03000000       0.52500000
NO2NO3N      11      0.25666667      0.23203328      0.02000000       0.87000000
TALK         11     88.86363636     20.92789449     46.33333333     123.50000000
TKJEL        11      0.50454545      0.19337513      0.25000000       0.80000000
TEMP         13     19.49051282      7.39566901      7.60000000      30.85000000
PH           13      7.05141026      0.29586099      6.61000000       7.60000000
SECCHI       13     29.30769231     26.98575123      9.00000000     108.00000000
CHLA          9      7.67055556      7.33750317      0.35500000      19.90000000
DO           12      4.77916667      2.71160176      1.40000000       9.00000000
DOSAT        12     50.17656541     24.64610885     17.12574411      93.98429196
TOC           5      7.86600000      3.34868332      4.52000000      13.10000000
DOC           4      5.65750000      2.89282302      3.40000000       9.87000000
POC           3      4.36666667      4.72581563      0.70000000       9.70000000
N_P          11      4.42000397      3.80173472      0.24032043      14.83091787

                                STATION=E044

TP            9      0.10650000      0.05824004      0.05400000       0.24300000
OP            9      0.03755556      0.01679699      0.01800000       0.07166667
NH3N          9      0.06796296      0.04078039      0.02666667       0.15500000
NO2NO3N       9      0.23574074      0.26985864      0.02000000       0.82666667
TALK          9     89.61111111     16.97199491     69.00000000     119.50000000
TKJEL         9      0.54814815      0.20757269      0.30000000       0.86666667
TEMP         10     17.83650000      7.21983304      6.52500000      30.25000000
PH           10      7.03533333      0.37238703      6.32000000       7.65000000
SECCHI       10     36.00000000     31.01970700      9.00000000     108.00000000
CHLA          6     10.53800000     11.33520463      1.27800000      31.00000000
DO            9      4.66444444      2.55606903      1.00000000       8.00000000
DOSAT         9     48.44087422     25.24291345     10.42384673      84.90360477
TOC           4      7.46750000      2.74701505      4.20000000      10.45000000
DOC           4      5.19000000      1.00342746      4.37000000       6.60000000
POC           2      3.13000000      1.89504617      1.79000000       4.47000000
N_P           9      3.67468695      3.58428099      0.19204390      11.27659574
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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                               STATION=E045

VARIABLE      N          MEAN           STANDARD           MINIMUM           MAXIMUM
                                        DEVIATION            VALUE             VALUE

TP            4      0.14150000       0.05785966        0.09466667        0.22600000
OP            4      0.05820833       0.02260915        0.02433333        0.07100000
NH3N          4      0.15333333       0.19498813        0.04500000        0.44500000
NO2NO3N       4      0.15666667       0.12033903        0.02000000        0.31333333
TALK          4     87.25000000      18.61127695       64.50000000      109.66666667
TKJEL         4      0.68333333       0.11055416        0.53333333        0.80000000
TEMP          9     18.47777778       7.71190710        7.65000000       30.75000000
PH            9      7.07740741       0.29363989        6.55333333        7.60000000
SECCHI        9     20.55555556       8.63294722       12.00000000       38.00000000
CHLA          4      7.61250000       7.92657713        0.95000000       18.30000000
DO            8      4.81437500       2.86176255        1.60000000        8.60000000
DOSAT         8     49.28147658      26.19678259       17.03987980       92.22233132
TOC           4      7.64250000       1.84116584        5.25000000        9.72000000
DOC           4      5.20500000       1.27907519        3.95000000        6.71000000
POC           2      2.92500000       1.02530483        2.20000000        3.65000000
N_P           4      2.58001554       1.91910173        0.78761062        4.83739837

                               STATION=E046

TP            5      0.18326667       0.06439598        0.09500000        0.25266667
OP            5      0.05206667       0.01764527        0.02600000        0.07200000
NH3N          5      0.15966667       0.19612000        0.02500000        0.50333333
NO2NO3N       5      0.20933333       0.22052211        0.02000000        0.56333333
TALK          5     82.10000000      15.91452865       66.50000000      103.00000000
TKJEL         5      0.69333333       0.24455174        0.40000000        1.06666667
TEMP         10     18.86150000       7.57350558        7.20000000       31.40000000
PH           10      7.19033333       0.39385856        6.39000000        7.80000000
SECCHI       10     15.20000000       4.02216083       12.00000000       25.00000000
CHLA          5      8.28000000       6.96004310        1.38000000       16.42000000
DO            9      5.13981481       3.24881864        0.80000000        9.06666667
DOSAT         9     52.52492388      28.49157750        9.60589336       89.95768967
TOC           5      8.80400000       4.07275460        4.78000000       14.30000000
DOC           4      5.52000000       3.52432499        3.59000000       10.80000000
POC           4      3.35250000       2.82933885        1.19000000        7.30000000
N_P           5      2.32738428       1.78838043        0.29213483        4.53460621


                               STATION=E047


TP            4      0.12216667       0.03508033        0.09100000        0.16433333
OP            4      0.04504167       0.03496516        0.02200000        0.09700000
NH3N          4      0.16916667       0.22740688        0.02000000        0.50666667
NO2NO3N       4      0.32000000       0.23815650        0.16666667        0.67333333
TALK          4     90.66666667      24.28991560       56.00000000      108.00000000
TKJEL         4      0.63750000       0.17552830        0.53333333        0.90000000
TEMP         13     19.16743590       7.89947495        7.36666667       31.30000000
PH           13      7.24615385       0.31542768        6.44333333        7.80000000
SECCHI       13     13.84615385       4.74071292        8.00000000       24.00000000
CHLA          9      5.72155556       5.34154676        0.28400000       15.90000000
DO           13      5.76487179       2.18204059        2.94333333        8.90000000
DOSAT        13     61.16491209      16.56532803       36.53286619       83.88809407
TOC           5      6.38800000       1.70937708        4.65000000        9.15000000
DOC           4      4.76250000       2.52500000        2.95000000        8.50000000
POC           3      2.04666667       0.48428642        1.70000000        2.60000000
N_P           4      3.85954257       0.85555506        3.03135889        4.89104116

                               STATION=E048

TP            3      0.14777778       0.06075939        0.09600000        0.21466667
OP            3      0.05072222       0.02017585        0.03266667        0.07250000
NH3N          3      0.14233333       0.15164542        0.02000000        0.31200000
NO2NO3N       3      0.60833333       0.19715335        0.44333333        0.82666667
TALK          3     79.94444444      23.94457334       52.33333333       95.00000000
TKJEL         3      0.53888889       0.11344765        0.45000000        0.66666667
TEMP         12     17.10458333       7.21508315        8.10000000       31.40000000
PH           12      7.42236111       0.24558779        6.95000000        7.86666667
SECCHI       11      9.36363636       3.17089033        6.00000000       17.00000000
CHLA          7      5.05157143       5.52807597        0.78100000       16.90000000
DO           12      7.72500000       1.95044025        4.80000000       10.75000000
DOSAT        12     79.84044415      10.71973036       65.01626293       93.97718164
TOC           5      6.60400000       2.62637202        2.65000000        9.30000000
DOC           4      3.30000000       1.61814709        1.20000000        4.94000000
POC           3      2.92000000       1.52797251        1.45000000        4.50000000
N_P           3      5.46946668       1.42661783        3.94409938        6.77083333
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                 ATCHAFALAYA STATION MEANS FOR ALL YEARS
                             STATION=E049

VARIABLE      N        MEAN          STANDARD        MINIMUM          MAXIMUM
                                     DEVIATION        VALUE            VALUE

TP            3     0,13066667      0.04061199      0,08400000      0,15800000
OP            3     0,04466667      0.02136196      0,02900000      0,06900000
NH3N          3     0,21000000      0.19000000      0,02000000      0,40000000
NO2NO3N       3     0,60333333      0.14571662      0.50000000      0,77000000
TALK          3    84,66666667     21.36195996     60,00000000     97,00000000
TKJEL         3     0,70000000      0,51961524      0,40000000      1,30000000
TEMP          8    17,46250000      7,39805718      8,40000000     30,00000000
PH            8     7,51416667      0.16528715      7,28000000      7,70000000
SECCHI        8     9,87500000      4.12093956      4,00000000     18,00000000
CHLA          5     3,15640000      2.20147332      0,52000000      6,00000000
DO            8     7,82500000      1,89567176      5,20000000     10,00000000
DOSAT         8    81,57410622     10,28856207     69,08114111     96,98082038
TOC           5     7,16000000      3,50883884      3,18000000     11,20000000
DOC           5     4,11200000      2,04523104      1,73000000      7,30000000
POC           4     2,10250000      1,46447658      0,50000000      3,90000000
N_P           3     6,55613824      1,67729613      5,26666667      8,45238095

                             STATION=E050

TP            3     0,33072222      0.11330445      0,24866667      0,46000000
OP            3     0,06322222      0,05373839      0,02200000      0,12400000
NH3N          3     0,10833333      0,09224063      0,03000000      0,21000000
NO2NO3N       3     0,38222222      0,18951204      0,17666667      0,55000000
TALK          3    88,77777778     20,35881827     65,33333333    102,00000000
TKJEL         3     0,80000000      0,22912878      0,60000000      1,05000000
TEMP         12    18,57013889      7,12585478      9,00000000     31,20000000
PH           12     7,26847222      0,34147737      6,61500000      7,70000000
SECCHI       12    12,83333333      4,08619257      6,00000000     20,00000000
CHLA          8     3,34787500      2,59640941      0,56000000      8,00000000
DO           12     6,24861111      2,53530085      2,33333333     11,45000000
DOSAT        12    65,44607796     22,42441792     27,56914424    102,32170121
TOC           6     8,46000000      2,73318130      5,26000000     12,00000000
DOC           5     4,74000000      3,57237316      2,59000000     11,10000000
POC           5     3,35400000      2,29740723      0,90000000      7,10000000
N_P           3     1,42152607      0,51538494      0,83109920      1,78130511


                             STATION=E051


TP            3     0,26233333      0,15559670      0,17200000      0,44200000
OP            2     0,03300000      0,00707107      0,02800000      0,03800000
NH3N          3     0,23666667      0,32470499      0,02000000      0,61000000
NO2NO3N       3     0,41000000      0,12124356      0,27000000      0,48000000
TALK          3    86,00000000     19,92485885     63,00000000     98,00000000
TKJEL         3     0,68888889      0,35642255      0,46666667      1,10000000
TEMP         13    17,93589744      8,11797482      3,00000000     30,13333333
PH           13     7,35871795      0,34592680      6,70333333      8,10000000
SECCHI       13    11,53846154      3,82133015      6,00000000     18,00000000
CHLA         10     9,10270000     12,21451615      0,78100000     35,30000000
DO           13     7,01346154      2,11928845      3,40000000     10,40000000
DOSAT        13    74,16687513     19,23239517     39,38710951    105,73768560
TOC           5     6,07000000      2,69311158      3,13000000     10,09000000
DOC           5     4,10600000      1,64136529      2,35000000      6,00000000
POC           3     1,35000000      1,30571819      0,07000000      2,68000000
N_P           3     3,08453096      2,79304954      1,26696833      6,30057803

                             STATION=E052

TP            3     0,13227778      0,08940301      0,07933333      0,23550000
OP            3     0,03805556      0,00995871      0,02866667      0,04850000
NH3N          3     0,12888889      0,13764218      0,02500000      0,28500000
NO2NO3N       3     0,25666667      0,12662280      0,12000000      0,37000000
TALK          3    86,72222222     17,95544898     66,00000000     97,66666667
TKJEL         3     0,50555556      0,04194352      0,46666667      0,55000000
TEMP         10    17,96833333      7,39962649      8,80000000     31,00000000
PH           10     7,25500000      0,33155172      6,50666667      7,65000000
SECCHI        9    14,33333333      5,09901951      6,00000000     20,00000000
CHLA          6     4,20833333      3,53844269      0,42000000      9,40000000
DO           10     6,08033333      2,48599854      1,46666667      8,93333333
DOSAT        10    63,54451590     21,79952800     17,47864801     84,56433938
TOC           5     9,44400000      4,61684199      5,42000000     17,10000000
DOC           5     5,12200000      3,61222508      2,83000000     11,50000000
POC           5     4,32200000      1,44620884      2,59000000      6,00000000
N_P           3     4,36643815      3,68774886      0,61571125      7,98780488
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ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=E053

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.12455556	0.08240657	0.07450000	0.21966667
OP	3	0.03866667	0.01025102	0.02850000	0.04900000
NH3N	3	0.16388889	0.20947244	0.02666667	0.40500000
NO2NO3N	3	0.30166667	0.21108845	0.06000000	0.45000000
TALK	3	86.94444444	24.48147448	59.33333333	106.00000000
TKJEL	3	0.61111111	0.11706282	0.50000000	0.73333333
TEMP	10	17.80833333	7.49256129	9.20000000	31.45000000
PH	10	7.18483333	0.36956468	6.36666667	7.60000000
SECCHI	10	15.80000000	8.14861951	7.00000000	31.00000000
CHLA	6	3.97950000	3.82617217	0.46000000	10.00000000
DO	10	5.92466667	2.84205811	1.06666667	8.93333333
DOSAT	10	60.98180791	24.33913065	12.56459822	83.21200189
TOC	5	7.30400000	2.86011014	4.80000000	12.03000000
DOC	5	5.06400000	2.62120774	2.78000000	9.30000000
POC	3	2.56000000	1.63557329	0.90000000	4.17000000
N_P	3	5.75221224	5.18921390	0.39453718	10.75471698

STATION=E054

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.15655556	0.10064036	0.09000000	0.27233333
OP	3	0.04344444	0.02965043	0.01966667	0.07666667
NH3N	3	0.16222222	0.20191674	0.02000000	0.39333333
NO2NO3N	3	0.28777778	0.23362680	0.02000000	0.45000000
TALK	3	88.11111111	15.62524074	70.33333333	99.66666667
TKJEL	3	0.68888889	0.13877773	0.53333333	0.80000000
TEMP	10	18.32183333	7.31493772	10.30000000	31.46666667
PH	10	7.06916667	0.35106122	6.31333333	7.60000000
SECCHI	10	21.30000000	13.60596275	7.00000000	52.00000000
CHLA	6	4.42916667	4.46348117	0.35500000	12.00000000
DO	10	5.40633333	2.58534447	0.60000000	8.26666667
DOSAT	10	56.26261490	22.77643663	7.16812566	79.00480422
TOC	5	7.13400000	1.94070348	4.09000000	9.51000000
DOC	5	6.82400000	3.29826166	3.03000000	11.60000000
POC	2	4.50000000	0.22627417	4.34000000	4.66000000
N_P	3	4.58779865	4.30416241	0.14687882	8.74074074

STATION=E055

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.12966667	0.10759802	0.05800000	0.25300000
OP	3	0.03544444	0.01896293	0.02400000	0.05733333
NH3N	3	0.12333333	0.15373137	0.02000000	0.30000000
NO2NO3N	3	0.11333333	0.09018500	0.02000000	0.20000000
TALK	3	84.77777778	12.50925583	70.33333333	92.00000000
TKJEL	3	0.65555556	0.15030833	0.50000000	0.80000000
TEMP	8	19.43375000	7.96716509	10.70000000	31.40000000
PH	8	7.19687500	0.31664466	6.82500000	7.60000000
SECCHI	8	23.00000000	7.52139805	12.00000000	35.00000000
CHLA	4	9.39500000	5.72294505	0.98000000	13.00000000
DO	8	5.21562500	2.66802955	0.40000000	8.80000000
DOSAT	8	55.36136129	24.02223089	4.78682236	81.88993373
TOC	5	6.16800000	2.16197132	4.40000000	9.74000000
DOC	5	5.30200000	2.19538607	3.46000000	8.40000000
POC	1	2.74000000	.	2.74000000	2.74000000
N_P	3	3.29624750	2.73647183	0.15810277	5.18518519

STATION=E056

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.11033333	0.08879377	0.04800000	0.21200000
OP	3	0.04300000	0.03551056	0.02200000	0.08400000
NH3N	3	0.09333333	0.11015141	0.02000000	0.22000000
NO2NO3N	3	0.06666667	0.04041452	0.02000000	0.09000000
TALK	3	85.00000000	8.88819442	75.00000000	92.00000000
TKJEL	3	0.63333333	0.11547005	0.50000000	0.70000000
TEMP	10	18.73450000	7.21392181	10.60000000	31.30000000
PH	10	7.11400000	0.43073451	6.22500000	7.70000000
SECCHI	10	30.00000000	20.24845673	9.00000000	81.00000000
CHLA	6	5.76366667	5.78261400	0.82000000	14.10000000
DO	9	6.40740741	2.88351530	2.00000000	10.80000000
DOSAT	9	69.70466896	35.11671072	20.72018398	146.08670278
TOC	5	7.05800000	2.66871130	3.49000000	10.08000000
DOC	5	5.54800000	1.86443557	3.96000000	8.70000000
POC	2	4.50000000	1.69705627	3.30000000	5.70000000
N_P	3	2.42106992	2.10352186	0.18867925	4.36619718

ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=E057

TP	3	0.14203333	0.14872150	0.05300000	0.31450000
OP	3	0.05116667	0.06182704	0.01300000	0.12250000
NH3N	3	0.10666667	0.10969658	0.02000000	0.23000000
NO2NO3N	3	0.12333333	0.12342339	0.02000000	0.26000000
TALK	3	90.33333333	10.21436896	83.00000000	102.00000000
TKJEL	3	0.71666667	0.18929694	0.50000000	0.85000000
TEMP	10	18.83383333	7.48316456	8.90000000	32.10000000
PH	10	7.15500000	0.36086658	6.33000000	7.70000000
SECCHI	9	26.22222222	14.53253056	11.00000000	60.00000000
CHLA	6	8.46883333	9.09757463	0.59000000	24.00000000
DO	9	6.44444444	2.93011187	0.80000000	9.40000000
DOSAT	9	69.54613519	31.85002254	8.31790714	117.59941628
TOC	5	8.12000000	1.76884143	6.24000000	10.50000000
DOC	5	5.34200000	1.74568611	3.74000000	8.00000000
POC	5	2.77800000	1.65406167	0.35000000	4.74000000
N_P	3	3.86650091	3.27524177	0.12718601	6.22641509

STATION=E058

TP	3	0.14833333	0.15009775	0.04900000	0.32100000
OP	3	0.04838889	0.05308283	0.01650000	0.10966667
NH3N	3	0.10777778	0.12795760	0.02333333	0.25500000
NO2NO3N	3	0.11333333	0.08220908	0.02000000	0.17500000
TALK	3	91.22222222	11.82433147	80.66666667	104.00000000
TKJEL	3	0.63333333	0.20816660	0.40000000	0.80000000
TEMP	10	18.49366667	7.45264133	8.80000000	31.60000000
PH	10	7.17550000	0.39598607	6.33000000	7.61666667
SECCHI	10	27.40000000	20.24955418	9.00000000	77.00000000
CHLA	6	5.91200000	6.49867433	0.72000000	14.10000000
DO	9	5.87592593	2.65627024	1.26666667	9.50000000
DOSAT	9	61.84129924	24.15926783	13.25490685	91.44917581
TOC	5	8.37800000	2.04162190	5.90000000	11.00000000
DOC	4	7.10750000	2.69991821	3.93000000	9.40000000
POC	3	2.58666667	0.88754343	1.60000000	3.32000000
N_P	3	3.31937469	2.78981993	0.13499481	5.33333333

STATION=E059

TP	4	0.20875000	0.18084132	0.00600000	0.44000000
OP	3	0.07711111	0.04467703	0.03300000	0.12233333
NH3N	4	0.06500000	0.02645751	0.04000000	0.10000000
NO2NO3N	4	0.34833333	0.28290163	0.17333333	0.77000000
TALK	4	85.08333333	4.69337595	82.00000000	92.00000000
TKJEL	4	0.90833333	0.17716910	0.70000000	1.10000000
TEMP	11	18.78590909	7.85597527	8.15000000	33.10000000
PH	11	7.30192424	0.45609247	6.78200000	8.40000000
SECCHI	10	15.70000000	8.76926451	6.00000000	36.00000000
CHLA	8	3.98262500	4.40665195	0.66000000	12.00000000
DO	10	6.59500000	2.24315213	2.93333333	9.20000000
DOSAT	10	73.61656326	27.46517296	33.22928092	127.49814702
TOC	4	8.42750000	1.97418971	6.10000000	10.90000000
DOC	4	4.73500000	1.71840042	3.64000000	7.30000000
POC	3	5.32333333	1.36873421	4.44000000	6.90000000
N_P	4	13.58153025	23.19921786	0.55303030	48.33333333

STATION=E060

TP	12	0.18434722	0.10325697	0.07833333	0.39300000
OP	11	0.04718182	0.01979639	0.02566667	0.09300000
NH3N	12	0.16736111	0.15792764	0.02000000	0.47000000
NO2NO3N	12	0.68777778	0.17933285	0.38666667	0.96000000
TALK	12	79.81944444	24.82010613	49.33333333	129.00000000
TKJEL	12	0.74861111	0.22601715	0.40000000	1.30000000
TEMP	18	16.75166667	8.36532590	6.00000000	31.90000000
PH	18	7.62981481	0.22690147	7.20000000	8.00000000
SECCHI	14	33.23809524	61.42599307	3.00000000	219.00000000
CHLA	14	7.85071429	6.66655823	0.90000000	28.20000000
DO	19	8.31614035	1.49390914	6.00000000	10.70000000
DOSAT	18	86.52539944	10.23640405	63.35589418	104.89372671
TOC	16	8.47875000	4.14699068	3.90000000	21.96000000
DOC	16	4.16750000	2.06168054	1.90000000	9.90000000
POC	11	5.28454545	4.77803165	0.70000000	18.29000000
N_P	12	5.85078290	3.16530429	1.78571429	11.22065728

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                     ATCHAFALAYA STATION MEANS FOR ALL YEARS
                                 STATION=E061

VARIABLE      N          MEAN        STANDARD         MINIMUM         MAXIMUM
                                    DEVIATION           VALUE           VALUE

TP            4    0.16616667      0.08523497      0.09100000      0.28566667
OP            4    0.03520833      0.00965265      0.02833333      0.04950000
NH3N          4    0.11666667      0.14429907      0.02666667      0.33000000
NO2NO3N       4    0.75250000      0.14080128      0.66000000      0.96000000
TALK          4   81.66666667     21.13974666     51.66666667     97.00000000
TKJEL         4    0.59166667      0.18782379      0.40000000      0.85000000
TEMP          7   18.66380952      8.20177949      8.26333333     32.00000000
PH            7    7.54047619      0.17343404      7.25000000      7.75000000
SECCHI        7    8.85714286      4.29839394      3.00000000     15.00000000
CHLA          4    5.32000000      4.64258549      0.98000000     11.90000000
DO            7    7.73333333      1.73813438      6.13333333     10.20000000
DOSAT         7   83.55728732     15.47151183     65.90700144    108.65114171
TOC           5    7.23600000      3.97418293      1.67000000     12.20000000
DOC           5    5.50600000      2.47763597      2.40000000      9.30000000
POC           4    2.34500000      2.93909850      0.30000000      6.60000000
N_P           4    6.15732454      2.48332276      2.61376896      8.13008130

                                 STATION=E062

TP            3    0.17600000      0.07353231      0.11900000      0.25900000
OP            3    0.03900000      0.00700000      0.03400000      0.04700000
NH3N          3    0.12000000      0.17320508      0.02000000      0.32000000
NO2NO3N       3    0.76666667      0.09451631      0.66000000      0.84000000
TALK          3   76.00000000     20.00000000     56.00000000     96.00000000
TKJEL         3    0.73333333      0.15275252      0.60000000      0.90000000
TEMP          9   17.58555556      8.31612156      6.70000000     32.20000000
PH            9    7.57555556      0.26363379      7.20000000      8.00000000
SECCHI        8    6.25000000      3.24037035      4.00000000     13.00000000
CHLA          6    6.73250000      7.28900799      0.95000000     21.00000000
DO            9    8.00000000      1.74068952      6.20000000     12.00000000
DOSAT         9   84.24167676     11.88919587     67.37395638    101.29955113
TOC           5    6.13600000      1.69883195      4.44000000      8.53000000
DOC           5    4.53600000      3.07472438      2.14000000      9.90000000
POC           3    2.80000000      2.31611744      0.90000000      5.38000000
N_P           3    5.50047190      2.08135480      3.32046332      7.46666667


                                 STATION=E063


TP            8    0.16600000      0.21848562      0.05400000      0.70400000
OP            8    0.03856250      0.02461045      0.02100000      0.09600000
NH3N          8    0.06437500      0.03590041      0.02500000      0.14000000
NO2NO3N       8    0.32250000      0.26090502      0.02000000      0.75500000
TALK          8   85.43750000     13.17583692     66.00000000    104.50000000
TKJEL         8    0.58125000      0.37601054      0.20000000      1.10000000
TEMP         10   18.46400000      7.55378338      9.67500000     33.00000000
PH           10    7.40100000      0.45240591      6.51500000      7.97500000
SECCHI       10   20.70000000     15.92377677      8.00000000     63.00000000
CHLA          6    8.44283333      8.48461291      0.50000000     18.70000000
DO            9    6.22222222      2.73531432      1.20000000      9.20000000
DOSAT         9   68.54669216     30.69192026     14.21468698     98.37061701
TOC           4   12.64500000      4.39795028      8.66000000     18.60000000
DOC           4    6.24500000      2.14242075      4.16000000      9.12000000
POC           4    6.40000000      5.22366410      1.00000000     13.40000000
N_P           8    4.19612593      3.72259764      0.22727273     12.30769231

                                 STATION=E064

TP            4    0.20550000      0.06462456      0.13700000      0.28400000
OP            4    0.04325000      0.00793200      0.03800000      0.05500000
NH3N          4    0.08500000      0.11704700      0.02000000      0.26000000
NO2NO3N       4    1.01000000      0.46925473      0.65000000      1.70000000
TALK          4   77.50000000     12.71482075     63.00000000     94.00000000
TKJEL         4    0.82500000      0.09574271      0.70000000      0.90000000
TEMP          7   16.49285714      9.28477376      5.50000000     32.40000000
PH            7    7.75714286      0.29358215      7.40000000      8.30000000
SECCHI        4    7.50000000      4.04145188      4.00000000     13.00000000
CHLA          4    4.80750000      3.84016818      1.83000000     10.20000000
DO            6    7.03333333      2.73471510      2.00000000      9.80000000
DOSAT         6   74.12977672     25.69150437     24.45455758     96.75024046
TOC           4   12.00250000      4.05624108      6.73000000     15.30000000
DOC           5    3.81800000      1.88513130      2.31000000      6.80000000
POC           4    7.80750000      4.30211866      2.23000000     12.70000000
N_P           4    5.29931889      1.16196137      3.84279476      6.33720930
```

ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=E065

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	5	0.21953333	0.14751960	0.10733333	0.43233333
OP	5	0.04726667	0.03767655	0.02233333	0.11200000
NH3N	6	0.16500000	0.15319922	0.03000000	0.36000000
NO2NO3N	6	0.69000000	0.41346235	0.25333333	1.40000000
TALK	6	86.88888889	20.52171388	71.00000000	126.00000000
TKJEL	5	0.91333333	0.15018507	0.70000000	1.10000000
TEMP	8	16.99041667	8.97033054	4.70000000	32.40000000
PH	9	7.68648148	0.25141053	7.23333333	8.15000000
SECCHI	5	11.60000000	3.20936131	9.00000000	17.00000000
CHLA	4	4.60825000	4.16424530	1.63300000	10.50000000
DO	9	7.32962963	2.73427039	3.50000000	12.00000000
DOSAT	8	74.45184184	21.76409085	43.00358796	99.16040683
TOC	8	9.71375000	2.64258498	5.10000000	12.70000000
DOC	10	5.14300000	1.56742570	3.27000000	7.90000000
POC	7	5.46142857	3.47116421	0.30000000	9.30000000
N_P	5	5.82199726	3.40744240	0.72474942	9.39130435

STATION=E066

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	1	0.10900000	.	0.10900000	0.10900000
OP	1	0.04100000	.	0.04100000	0.04100000
NH3N	1	0.21000000	.	0.21000000	0.21000000
NO2NO3N	1	0.10000000	.	0.10000000	0.10000000
TALK	1	79.00000000	.	79.00000000	79.00000000
TKJEL	1	1.00000000	.	1.00000000	1.00000000
TEMP	1	31.10000000	.	31.10000000	31.10000000
PH	1	6.95000000	.	6.95000000	6.95000000
SECCHI	1	42.00000000	.	42.00000000	42.00000000
CHLA	1	26.80000000	.	26.80000000	26.80000000
DO	1	1.80000000	.	1.80000000	1.80000000
DOSAT	1	24.28109623	.	24.28109623	24.28109623
TOC	2	17.44500000	11.10864753	9.59000000	25.30000000
DOC	2	13.70000000	9.33380951	7.10000000	20.30000000
POC	2	3.74500000	1.77483802	2.49000000	5.00000000
N_P	1	2.84403670	.	2.84403670	2.84403670

STATION=E067

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	1	0.17900000	.	0.17900000	0.17900000
OP	1	0.03300000	.	0.03300000	0.03300000
NH3N	1	0.43500000	.	0.43500000	0.43500000
NO2NO3N	1	0.20000000	.	0.20000000	0.20000000
TALK	1	107.50000000	.	107.50000000	107.50000000
TKJEL	1	1.10000000	.	1.10000000	1.10000000
TEMP	1	31.75000000	.	31.75000000	31.75000000
PH	1	7.42500000	.	7.42500000	7.42500000
SECCHI	1	18.00000000	.	18.00000000	18.00000000
CHLA	1	21.10000000	.	21.10000000	21.10000000
DO	1	2.86000000	.	2.86000000	2.86000000
DOSAT	1	38.93442709	.	38.93442709	38.93442709
TOC	1	14.98000000	.	14.98000000	14.98000000
DOC	1	6.39000000	.	6.39000000	6.39000000
POC	0	.	.	.	.
N_P	1	3.54748603	.	3.54748603	3.54748603

STATION=E068

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	10	0.26425000	0.11141545	0.10700000	0.41800000
OP	10	0.05290000	0.07591472	0.01000000	0.25800000
NH3N	10	0.14166667	0.11201025	0.02666667	0.36000000
NO2NO3N	10	0.37166667	0.32556219	0.02000000	0.79000000
TALK	10	110.46666667	42.42239101	46.00000000	160.00000000
TKJEL	10	0.83000000	0.30477679	0.45000000	1.40000000
TEMP	11	17.40424242	7.42025592	10.00000000	32.80000000
PH	11	7.20303030	0.41081343	6.80000000	8.00000000
SECCHI	5	11.00000000	8.71779789	4.00000000	26.00000000
CHLA	9	10.10222222	12.65767532	0.14000000	39.20000000
DO	9	7.24444444	2.47391952	1.20000000	9.20000000
DOSAT	9	77.20123939	29.50120658	15.37465081	126.99033944
TOC	11	9.86454545	4.15818076	2.60000000	18.40000000
DOC	10	7.03800000	6.05364133	2.97000000	21.30000000
POC	5	4.89800000	1.77167153	3.22000000	6.90000000
N_P	10	2.83966240	3.17947493	0.14354067	10.74766355

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                  ATCHAFALAYA STATION MEANS FOR ALL YEARS
                               STATION=E069
VARIABLE     N          MEAN          STANDARD          MINIMUM          MAXIMUM
                                      DEVIATION           VALUE            VALUE
TP           4    0.11425000       0.03530227       0.07500000       0.15700000
OP           4    0.01975000       0.01017759       0.01400000       0.03500000
NH3N         4    0.14750000       0.09287088       0.02000000       0.23000000
NO2NO3N      4    0.13250000       0.14728091       0.02000000       0.33000000
TALK         4  118.50000000      15.30250524      97.50000000     134.00000000
TKJEL        4    0.75000000       0.15811388       0.60000000       0.95000000
TEMP        10   18.82666667       7.40206928      10.50000000      33.90000000
PH          10    7.33166667       0.49965235       7.00000000       8.70000000
SECCHI       8   10.37500000       3.88908730       6.00000000      17.00000000
CHLA         7    4.44571429       4.21974666       1.07000000      11.10000000
DO          10    6.38333333       2.54583902       2.00000000      11.20000000
DOSAT       10   70.62245735      34.87442780      25.60460364     156.86300775
TOC         13    8.68615385       5.03708007       3.00000000      19.90000000
DOC         12    5.31916667       4.54487615       1.40000000      17.80000000
POC         11    3.53909091       2.24514345       0.80000000       7.40000000
N_P          4    2.94828356       2.67124153       0.31746032       5.65656566

                               STATION=E070

TP           3    0.19733333       0.19777344       0.06800000       0.42500000
OP           3    0.04333333       0.03121431       0.02100000       0.07900000
NH3N         3    0.13000000       0.19052559       0.02000000       0.35000000
NO2NO3N      3    0.07333333       0.09237604       0.02000000       0.18000000
TALK         3  146.33333333      25.73583753     130.00000000     176.00000000
TKJEL        3    1.50000000       0.96436508       0.80000000       2.60000000
TEMP         3   21.08333333       4.98054549      17.40000000      26.75000000
PH           4    8.08750000       0.41104542       7.65000000       8.55000000
SECCHI       3   16.00000000       9.16515139       6.00000000      24.00000000
CHLA         3   39.73333333      37.43051340       3.80000000      78.50000000
DO           5    8.18400000       1.56245960       5.60000000       9.60000000
DOSAT        3   89.27000827      16.48357967      71.11078030     103.28826867
TOC          3   12.08666667       2.84649492       8.80000000      13.76000000
DOC          3    7.69666667       5.36945373       3.70000000      13.80000000
POC          2    6.63500000       2.17081782       5.10000000       8.17000000
N_P          3    0.74644484       0.44321858       0.40404040       1.24705882

                               STATION=E071

TP           0     .                 .                .                .
OP           0     .                 .                .                .
NH3N         0     .                 .                .                .
NO2NO3N      0     .                 .                .                .
TALK         0     .                 .                .                .
TKJEL        0     .                 .                .                .
TEMP         0     .                 .                .                .
PH           0     .                 .                .                .
SECCHI       0     .                 .                .                .
CHLA         0     .                 .                .                .
DO           0     .                 .                .                .
DOSAT        0     .                 .                .                .
TOC          0     .                 .                .                .
DOC          1    3.74000000         .           3.74000000       3.74000000
POC          0     .                 .                .                .
N_P          0     .                 .                .                .

                               STATION=E072

TP           9    0.23653704       0.14724120       0.11800000       0.55766667
OP           9    0.09211111       0.09104334       0.01800000       0.28966667
NH3N         9    0.12481481       0.09764037       0.02000000       0.30000000
NO2NO3N      9    0.11111111       0.07005950       0.02000000       0.20000000
TALK         9   99.38888889      97.79137374      32.66666667     327.50000000
TKJEL        9    0.76851852       0.21220477       0.53333333       1.25000000
TEMP        10   16.54333333       7.97900099       6.70000000      28.16666667
PH          10    7.25166667       0.53520793       6.63333333       8.16666667
SECCHI      10   12.00000000       5.43650214       5.00000000      22.00000000
CHLA         9    7.30000000       9.93025679       0.60000000      28.50000000
DO           9    5.18481481       2.63567781       0.66666667       8.40000000
DOSAT        9   51.12837232      24.46822601       8.07962650      79.29703499
TOC          9   11.74444444       2.60686647       9.07000000      17.10000000
DOC          9    7.38444444       2.90903812       3.77000000      12.30000000
POC          8    4.11500000       2.31321051       1.00000000       6.80000000
N_P          9    1.36555523       1.24781822       0.35042735       4.06779661
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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                                STATION=E073
VARIABLE       N          MEAN          STANDARD          MINIMUM           MAXIMUM
                                        DEVIATION           VALUE             VALUE
TP             5    0,12980000        0,03304088        0.10500000        0.18600000
OP             5    0,04140000        0,02685703        0.01000000        0.08300000
NH3N           5    0,19333333        0,15520596        0.05000000        0.37000000
NO2NO3N        5    0,12266667        0,08632625        0.02000000        0.21000000
TALK           5   89,80000000       24,38761070       48.33333333      111.00000000
TKJEL          5    1,15333333        0,56647058        0.66666667        2.10000000
TEMP           5   14,15000000        7,95129270        6.68333333       26.00000000
PH             5    7,63000000        0,71008607        6.73333333        8.45000000
SECCHI         5   13,80000000        6,26099034        8.00000000       24.00000000
CHLA           2   15,00000000       13,71787156        8.30000000       24.70000000
DO             5    6,44500000        2,26620400        3.73333333        9.02500000
DOSAT          5   64,39412191       22,69527500       34.72381118       92.73689187
TOC            5   10,43200000        0,88660589        9.50000000       11.80000000
DOC            5    7,39200000        3,93320734        4.46000000       13.00000000
POC            3    4,31333333        2,27926158        1.70000000        5.89000000
N_P            5    2,27958572        1,41869959        1.01851852        4.42748092

                                STATION=E074

TP             2    0,28125000        0,05975052        0.23900000        0.32350000
OP             2    0,04725000        0,01873833        0.03400000        0.06050000
NH3N           2    0,06750000        0,06010408        0.02500000        0.11000000
NO2NO3N        2    0,28000000        0,36769553        0.02000000        0.54000000
TALK           2   91,25000000       48,43681451       57.00000000      125.50000000
TKJEL          2    0,67500000        0,10606602        0.60000000        0.75000000
TEMP           0     .                 .                 .                 .
PH             0     .                 .                 .                 .
SECCHI         0     .                 .                 .                 .
CHLA           0     .                 .                 .                 .
DO             0     .                 .                 .                 .
DOSAT          0     .                 .                 .                 .
TOC            7    7,40857143        1,82183450        5.21000000       11.19000000
DOC            7    3,80428571        1,32219334        1.58000000        6.00000000
POC            6    3,60500000        1,93273640        0.80000000        6.81000000
N_P            2    1,42938441        1,82473269        0.13910355        2.71966527

                                STATION=E075

TP             2    0,15633333        0,07306770        0.10466667        0.20800000
OP             2    0,03266667        0,01178511        0.02433333        0.04100000
NH3N           2    0,11875000        0,12551145        0.03000000        0.20750000
NO2NO3N        2    0,04875000        0,04065864        0.02000000        0.07750000
TALK           2   37,62500000       23,51130047       21.00000000       54.25000000
TKJEL          2    0,93750000        0,05303301        0.90000000        0.97500000
TEMP           1   11,37500000         .               11.37500000       11.37500000
PH             1    7,00000000         .                7.00000000        7.00000000
SECCHI         2   99,50000000       89,80256121       36.00000000      163.00000000
CHLA           1    2,70000000         .                2.70000000        2.70000000
DO             1    3,80000000         .                3.80000000        3.80000000
DOSAT          1   33,85920653         .               33.85920653       33.85920653
TOC            3   15,56666667        4,93288286        9.90000000       18.90000000
DOC            3    8,96666667        4,11865674        4.40000000       12.40000000
POC            3    6,60000000        1,15325626        5.50000000        7.80000000
N_P            2    0,92394966        0,63108241        0.47770701        1.37019231

                                STATION=E076

TP             0     .                 .                 .                 .
OP             0     .                 .                 .                 .
NH3N           1    0,02333333         .                0.02333333        0.02333333
NO2NO3N        1    0,64333333         .                0.64333333        0.64333333
TALK           1   57,66666667         .               57.66666667       57.66666667
TKJEL          0     .                 .                 .                 .
TEMP           1   21,00000000         .               21.00000000       21.00000000
PH             1    7,50000000         .                7.50000000        7.50000000
SECCHI         1    6,00000000         .                6.00000000        6.00000000
CHLA           1    1,80000000         .                1.80000000        1.80000000
DO             1    6,93333333         .                6.93333333        6.93333333
DOSAT          1   79,85408012         .               79.85408012       79.85408012
TOC            0     .                 .                 .                 .
DOC            0     .                 .                 .                 .
POC            0     .                 .                 .                 .
N_P            0     .                 .                 .                 .
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                ATCHAFALAYA STATION MEANS FOR ALL YEARS
                            STATION=F001

VARIABLE      N          MEAN        STANDARD        MINIMUM        MAXIMUM
                                     DEVIATION        VALUE          VALUE

TP            4    0,26041667      0.05266201     0,19033333     0.31600000
OP            4    0,10197917      0.04849744     0.04866667     0.16600000
NH3N          4    0,19354167      0.13415782     0,09750000     0.38333333
NO2NO3N       4    0,26687500      0.09367095     0.15000000     0.37666667
TALK          4  106,56250000     47.09512512    58,00000000   163,33333333
TKJEL         4    0,81666667      0.14529663     0.70000000     1.00000000
TEMP         10   18,59200000      6.56808749     9.32000000    29,83333333
PH           10    7,12916667      0.37013115     6.23666667     7.56666667
SECCHI       10    9,40000000      4.57529598     4.00000000    20.00000000
CHLA          7    2,55557143      1.75165463     0.50000000     6.00000000
DO           10    5,52633333      1,80643462     3.20000000     8.60000000
DOSAT        10   58,97380102     15.03688441    39.38083420    90.10111838
TOC           4   12,04500000      3.16154498     7.79000000    14.50000000
DOC           4    8,55750000      3.66277104     4.53000000    12.00000000
POC           2    5,60000000      3.53553391     3,10000000     8.10000000
N_P           4    1,77705451      0.71219490     0,97150259     2.40506329

                            STATION=F002

TP            4    0,24362500      0,07514189     0,13950000     0,30600000
OP            4    0,06966667      0,01713779     0,06000000     0,09533333
NH3N          4    0,14125000      0,17780230     0,02500000     0,40333333
NO2NO3N       4    0,19250000      0,15559622     0,02000000     0,37666667
TALK          4   90,41666667     53,39397594    57,66666667   170,00000000
TKJEL         4    1,17083333      0,68750421     0,76666667     2,20000000
TEMP          7   19,35523810      7,51844937    10,92000000    30,70000000
PH            7    7,72333333      0,51905890     7,20000000     8,50000000
SECCHI        7    7,94285714      2,87915331     4,00000000    12,00000000
CHLA          4    5,52975000      9,44809118     0,58900000    19,70000000
DO            7    6,91809524      2,06361680     3,56000000     8,80000000
DOSAT         7   76,00864460     22,79041568    48,31208389   114,59031189
TOC           5   12,44200000      5,01761099     9,34000000    21,30000000
DOC           4    6,27000000      3,12881234     2,92000000     9,90000000
POC           4    6,94750000      3,90970907     1,90000000    11,40000000
N_P           4    1,30414563      1,06688578     0,32258065     2,75139665

                            STATION=F003

TP            4    0,21666667      0.06246199     0,12450000     0.26100000
OP            4    0,07241667      0.03566524     0.04450000     0.12450000
NH3N          4    0.15208333      0.15932366     0.03500000     0.38000000
NO2NO3N       4    0,28291667      0.18490425     0.02500000     0.46000000
TALK          4   83.75000000     30.21401731    62,66666667   128.50000000
TKJEL         4    0.95416667      0.23935678     0.75000000     1.30000000
TEMP         10   20,58550000      5.98871593    11.30333333    30.95000000
PH            9    7.26074074      0.37085684     6.76666667     7.90000000
SECCHI        9    7,55555556      2.83333333     4.00000000    12.00000000
CHLA          7    3.73671429      4.36923116     0.78100000    11.40000000
DO           10    5.89133333      2.00524263     2.48000000     8.06666667
DOSAT        10   65,37170289     18.72274744    30,84128311    83.25380270
TOC           4   14.02000000      6.38548876     9.01000000    22.40000000
DOC           4    7.25750000      3.53693252     4.18000000    11.90000000
POC           4    6.76250000      5.04617594     3.70000000    14.30000000
N_P           4    1,83471761      1.08257997     0.48192771     3.12633833

                            STATION=F004

TP            4    0,28825000      0.18397350     0.06500000     0.50900000
OP            4    0.02450000      0.00519615     0.01700000     0.02800000
NH3N          4    0.15500000      0.17990738     0.02000000     0.42000000
NO2NO3N       4    0,14000000      0.14696938     0.02000000     0.34000000
TALK          4   75,25000000     20.35313244    51,00000000    94.00000000
TKJEL         4    1.82500000      0.90323493     0.80000000     3.00000000
TEMP          9   20.43000000      9.59061260     3.00000000    32.30000000
PH            8    8.26000000      0.52394111     7.50000000     8.90000000
SECCHI        8    7.12500000      5.33017019     2.00000000    18.00000000
CHLA          8   25.26312500     19.75638311     7.50000000    66.70000000
DO            9    9.20000000      1.55563492     6.40000000    11.00000000
DOSAT         8   99.20163254     20.84328531    74.76634095   129.62951421
TOC           4   13,28500000      4.74055904     9.30000000    19.90000000
DOC           4    5.92000000      3.33650516     3.90000000    10.90000000
POC           4    7.36500000      1.84292340     5.12000000     9.00000000
N_P           4    1,04452955      0.85968588     0.42682927     2.31075697
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                 ATCHAFALAYA STATION MEANS FOR ALL YEARS
                              STATION=F005

VARIABLE      N           MEAN       STANDARD        MINIMUM        MAXIMUM
                                    DEVIATION          VALUE          VALUE

TP            4     0,29775000     0,08816415     0,21300000     0,41500000
OP            4     0,05375000     0,01479583     0,03200000     0,06400000
NH3N          4     0,13000000     0,17088007     0,02000000     0,38000000
NO2NO3N       4     0,11500000     0,12503333     0,02000000     0,29000000
TALK          4    58,75000000     6,18465844    51,00000000    66,00000000
TKJEL         4     1,30000000     0,24494897     1,00000000     1,50000000
TEMP         12    22,52166667     7,46040357    10,95000000    32,00000000
PH           12     8,00833333     0,44359755     7,38000000     8,83000000
SECCHI       12     9,00000000     4,26401433     2,00000000    17,00000000
CHLA         10    20,94670000    18,32423550     1,00000000    58,40000000
DO           12     8,70000000     1,95308614     5,60000000    13,00000000
DOSAT        12   101,66556583    25,46379256    72,17643824   175,12243692
TOC           3    10,75000000     2,15000000     8,60000000    12,90000000
DOC           3     7,47000000     3,96253707     3,31000000    11,20000000
POC           2     6,22000000     1,72534055     5,00000000     7,44000000
N_P           4     0,86938840     0,79409799     0,12820513     1,99203187

                              STATION=F006

TP            4     0,23100000     0,03674235     0,18600000     0,26100000
OP            4     0,03750000     0,01201388     0,02300000     0,05200000
NH3N          4     0,11000000     0,13038405     0,02000000     0,30000000
NO2NO3N       4     0,23500000     0,35265658     0,02000000     0,76000000
TALK          4    71,25000000    14,03269991    56,00000000    90,00000000
TKJEL         4     1,15000000     0,26457513     0,90000000     1,50000000
TEMP         12    21,48750000     6,34293182    11,50000000    29,50000000
PH           12     8,08583333     0,35856934     7,59000000     8,60000000
SECCHI       11     8,72727273     4,75585763     2,00000000    18,00000000
CHLA         11    17,64600000    14,24764307     0,75000000    45,70000000
DO           12     8,21666667     1,68298076     4,60000000    10,40000000
DOSAT        12    93,62880782    14,00880663    59,37545325   119,99622275
TOC           4    12,76500000     1,23540816    11,86000000    14,50000000
DOC           4     4,95000000     0,85747692     4,23000000     6,00000000
POC           4     7,81500000     0,46076024     7,50000000     8,50000000
N_P           4     1,45586145     1,28793843     0,15325670     3,02681992


                              STATION=F007


TP            4     0,19435417     0,05308669     0,13000000     0,24966667
OP            4     0,04995833     0,01645047     0,03150000     0,07150000
NH3N          4     0,18154167     0,17200147     0,02000000     0,42500000
NO2NO3N       4     0,33520833     0,26338113     0,05750000     0,66333333
TALK          4    73,62500000    11,29435700    61,00000000    88,00000000
TKJEL         4     0,97291667     0,15235421     0,75000000     1,07500000
TEMP          9    21,34962963     6,99897045    12,04000000    32,15000000
PH            9     7,66148148     0,36487102     7,21666667     8,40000000
SECCHI        9     8,44444444     3,60940130     4,00000000    15,00000000
CHLA          7     9,41542857     7,56710907     1,51000000    21,50000000
DO            9     7,29259259     1,55755576     4,75000000     9,40000000
DOSAT         9    82,17345983    10,12661107    65,05682133    96,68525276
TOC           3    10,17666667     2,58372470     7,93000000    13,00000000
DOC           4     6,49000000     3,21727628     3,19000000     9,90000000
POC           3     2,98000000     1,82296462     1,10000000     4,74000000
N_P           4     2,63211803     1,00687363     1,15925395     3,34615385

                              STATION=F008

TP            4     0,29254167     0,05442432     0,21450000     0,34066667
OP            4     0,09991667     0,03031272     0,07300000     0,13550000
NH3N          4     0,22791667     0,16829414     0,04500000     0,41500000
NO2NO3N       4     0,19875000     0,14389666     0,02000000     0,36500000
TALK          4    70,41666667    12,25765067    58,66666667    81,00000000
TKJEL         4     1,07083333     0,24051449     0,80000000     1,33333333
TEMP          9    21,92185185     6,50627755    12,54000000    32,85000000
PH            9     7,24185185     0,46532205     6,23500000     7,80000000
SECCHI        9     7,66666667     3,70809924     2,00000000    12,00000000
CHLA          7     5,69485714     6,04219760     0,20000000    13,40000000
DO            9     3,51296296     2,18961846     0,60000000     6,50000000
DOSAT         9    41,56848857    25,76966647     6,77056135    70,71287755
TOC           4    12,89250000     1,26378730    11,36000000    14,20000000
DOC           4     7,01000000     4,28210229     3,90000000    13,10000000
POC           4     5,88250000     3,63654025     0,50000000     8,51000000
N_P           4     1,45866163     0,97120308     0,20866774     2,57001647
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ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=F009

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.21910417	0.06775478	0.18300000	0.32066667
OP	4	0.05493750	0.01860821	0.03000000	0.07500000
NH3N	4	0.20458333	0.17699851	0.02000000	0.44500000
NO2NO3N	4	0.27666667	0.19374955	0.07500000	0.51666667
TALK	4	74.04166667	11.72080692	58.33333333	85.33333333
TKJEL	4	1.13541667	0.12916667	1.00000000	1.30000000
TEMP	9	22.34685185	8.04176821	14.73333333	31.97500000
PH	9	7.57703704	0.34714188	7.07333333	8.16666667
SECCHI	9	8.00000000	2.87228132	3.00000000	12.00000000
CHLA	7	9.47614286	7.44640876	0.60000000	19.74000000
DO	9	6.33148148	1.24366295	4.60000000	8.13333333
DOSAT	9	73.34138074	8.10524593	62.79640236	87.17096026
TOC	4	9.19000000	2.36348613	5.65000000	10.51000000
DOC	4	5.92000000	1.52429219	3.86000000	7.50000000
POC	4	3.27000000	1.26367190	1.79000000	4.59000000
N_P	4	2.18582311	0.83304976	1.27717391	3.28476821

STATION=F010

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	6	0.17272222	0.06691003	0.11700000	0.29666667
OP	6	0.07638889	0.03595579	0.04633333	0.14333333
NH3N	6	0.09250000	0.04252777	0.04666667	0.16666667
NO2NO3N	6	0.18611111	0.14665783	0.04333333	0.46000000
TALK	6	70.33333333	60.25870154	26.00000000	173.00000000
TKJEL	6	0.62222222	0.10470417	0.50000000	0.76666667
TEMP	7	19.47571429	6.90946874	9.36333333	30.00000000
PH	7	7.23714286	0.25648932	6.90000000	7.70000000
SECCHI	7	12.14285714	3.43649877	7.00000000	18.00000000
CHLA	4	2.66750000	2.69237658	0.50000000	6.60000000
DO	7	5.88476190	2.02112808	3.20000000	8.40000000
DOSAT	7	63.65179358	17.48642751	40.38926955	88.15808146
TOC	5	10.82400000	2.21897048	8.27000000	13.07000000
DOC	5	6.50800000	2.67340046	3.55000000	9.50000000
POC	4	5.57000000	1.62886464	3.88000000	7.60000000
N_P	6	1.73639764	1.05106182	0.72761194	3.39350181

STATION=F011

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	10	0.25412500	0.11254213	0.13833333	0.47366667
OP	10	0.08202500	0.03320322	0.03700000	0.14000000
NH3N	10	0.14000000	0.10965434	0.05000000	0.42500000
NO2NO3N	10	0.25725000	0.22508299	0.02000000	0.74000000
TALK	10	132.03666667	116.11476278	23.66666667	399.20000000
TKJEL	10	0.76666667	0.22360680	0.56666667	1.20000000
TEMP	9	20.44629630	7.62706610	11.20000000	29.58333333
PH	10	7.36566667	0.29035547	6.90000000	7.76666667
SECCHI	9	12.11111111	8.43274043	4.00000000	29.00000000
CHLA	7	2.58714286	3.41206054	0.20000000	9.90000000
DO	8	5.65583333	1.99183711	2.26666667	7.80000000
DOSAT	8	65.07099880	21.15662525	27.23651436	96.73015572
TOC	7	11.03428571	1.65489030	7.69000000	12.54000000
DOC	10	6.46200000	2.63145840	3.67000000	11.00000000
POC	7	4.73000000	2.55755091	1.20000000	8.27000000
N_P	10	1.76438870	1.46847848	0.52071006	4.70297030

STATION=G001

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.15155556	0.06424375	0.07800000	0.19666667
OP	3	0.05788889	0.03683346	0.02100000	0.09466667
NH3N	4	0.12500000	0.11090537	0.02000000	0.27000000
NO2NO3N	4	0.06083333	0.04573474	0.02000000	0.12000000
TALK	4	124.33333333	10.33870828	111.00000000	133.00000000
TKJEL	3	1.00000000	0.10000000	0.90000000	1.10000000
TEMP	10	22.19050000	6.75281524	11.13000000	30.60000000
PH	10	7.59516667	0.35128376	6.95000000	8.20000000
SECCHI	10	14.70000000	7.19644974	6.00000000	33.00000000
CHLA	8	13.26750000	10.59488118	3.20000000	30.70000000
DO	10	5.20666667	2.25956404	2.00000000	9.60000000
DOSAT	10	60.44040003	23.41809388	18.86844943	99.15572227
TOC	5	15.54400000	9.51796880	7.64000000	32.07000000
DOC	7	9.78571429	5.08276781	3.86000000	18.91000000
POC	5	6.50400000	4.00063495	3.30000000	13.16000000
N_P	3	1.31442851	0.77838402	0.64102564	2.16666667

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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                                STATION=G002

VARIABLE      N        MEAN          STANDARD         MINIMUM          MAXIMUM
                                     DEVIATION         VALUE            VALUE

TP           12     0.13494444      0.05122250      0.06000000       0.22500000
OP           12     0.04077778      0.02123288      0.00200000       0.07350000
NH3N         12     0.15819444      0.31357619      0.02000000       1.09000000
NO2NO3N      12     0.13750000      0.27532213      0.02000000       0.98000000
TALK         12   110.16666667     19.07679854     76.00000000     140.00000000
TKJEL        12     0.82777778      0.27981100      0.53333333       1.50000000
TEMP         16    19.29875000      7.59810216      9.80000000      31.60000000
PH           16     7.59479167      0.34997030      6.95000000       8.00500000
SECCHI       17    80.94117647    104.70701420      8.00000000     391.00000000
CHLA         14    14.08482143     13.72049661      3.30000000      55.00000000
DO           16     6.43395833      2.47947851      3.00000000      10.16666667
DOSAT        15    68.72463593     23.59892887     37.59740643     103.22351211
TOC          13    10.16307692      2.54384677      5.61000000      14.40000000
DOC          11     8.30545455      3.19892283      4.22000000      13.56000000
POC           8     3.45250000      2.42228198      0.20000000       8.06000000
N_P          12     1.70561662      2.17947146      0.25280899       7.16921519

                                STATION=G003

TP            4     0.15366667      0.04542943      0.08850000       0.19366667
OP            4     0.06404167      0.03660231      0.02450000       0.11266667
NH3N          4     0.15958333      0.14632773      0.02000000       0.33500000
NO2NO3N       4     0.14541667      0.04035433      0.09666667       0.19500000
TALK          4   116.62500000      2.56173769    114.00000000     120.00000000
TKJEL         4     0.76250000      0.14930394      0.60000000       0.95000000
TEMP         14    22.61559524      6.48351814     11.37500000      30.60000000
PH           14     7.66785714      0.49032452      7.03000000       8.80000000
SECCHI       13    17.07692308      6.18414018     10.00000000      30.00000000
CHLA         13    15.33576923     14.06050190      5.21000000      50.20000000
DO           14     5.67380952      1.86461327      2.80000000       8.20000000
DOSAT        14    63.89076813     25.72887794     12.32625755     109.97885710
TOC           6    10.88000000      2.39269722      6.95000000      13.40000000
DOC           8     8.05375000      3.68482191      4.01000000      13.80000000
POC           5     4.09000000      2.17891360      1.20000000       6.58000000
N_P           4     2.04203186      0.69032102      1.29230769       2.79411765


                                STATION=G004

TP           15     0.23151019      0.13994586      0.10938889       0.59000000
OP           14     0.07909871      0.06916394      0.03050000       0.33843750
NH3N         14     0.25552579      0.47633212      0.02000000       1.71000000
NO2NO3N      14     0.11382937      0.09428041      0.02000000       0.30000000
TALK         14   107.02827381     15.16255121     76.44444444     128.00000000
TKJEL        15     0.89648148      0.38957630      0.42500000       2.00000000
TEMP         18    18.92776235      8.47355000      8.50000000      32.80000000
PH           19     7.72084795      0.34792364      7.07916667       8.40000000
SECCHI       19    19.95175439     24.75720552      6.00000000      93.50000000
CHLA         17    13.20401961     11.84857951      4.52000000      54.40000000
DO           19     7.17520468      2.08687258      1.60000000      10.29166667
DOSAT        18    77.41831570     20.24991837     20.74097468     112.37575580
TOC          18    11.17546296      4.56107815      5.68333333      26.70000000
DOC          19     6.47017544      2.55454949      2.84000000      11.20000000
POC          18     4.96805556      4.00339587      0.30000000      18.20000000
N_P          14     1.81214869      2.66782137      0.07969622       9.26267281

                                STATION=G005

TP            3     0.21200000      0.14042436      0.12500000       0.37400000
OP            3     0.07266667      0.07534144      0.01200000       0.15700000
NH3N          3     0.16666667      0.15534907      0.04000000       0.34000000
NO2NO3N       3     0.24000000      0.33045423      0.02000000       0.62000000
TALK          3   107.00000000     12.48999600     97.00000000     121.00000000
TKJEL         3     0.93333333      0.11547005      0.80000000       1.00000000
TEMP          9    21.61666667      7.02449464     10.69000000      30.00000000
PH           10     7.65300000      0.53630526      7.13000000       8.70000000
SECCHI       10    13.50000000      8.36991969      5.00000000      36.00000000
CHLA          9    16.82311111     17.56511679      0.73000000      58.10000000
DO            9     7.14444444      2.06948732      4.00000000      10.40000000
DOSAT         9    82.72115246     27.02682943     47.30095748     138.16228223
TOC           5    10.38600000      5.00641389      5.58000000      18.90000000
DOC           5     5.98600000      4.01895260      2.58000000      12.70000000
POC           4     6.34250000      4.15185400      3.00000000      12.40000000
N_P           3     2.88423852      4.15353330      0.43795620       7.68000000
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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                               STATION=G006

VARIABLE      N          MEAN         STANDARD          MINIMUM          MAXIMUM
                                      DEVIATION           VALUE            VALUE

TP            3    0.24950000       0.14775571       0.13400000       0.41600000
OP            3    0.07250000       0.05417333       0.02100000       0.12900000
NH3N          3    0.16666667       0.22854613       0.02000000       0.43000000
NO2NO3N       3    0.07500000       0.09526279       0.02000000       0.18500000
TALK          3   98.83333333      20.41037318      83.50000000     122.00000000
TKJEL         3    1.76666667       0.83266640       1.10000000       2.70000000
TEMP          9   20.89277778       7.04313722      10.71000000      29.80000000
PH           10    8.39950000       0.44797352       7.68000000       9.05000000
SECCHI       10   15.60000000       4.74224513      10.00000000      25.00000000
CHLA          7   26.10914286      10.28175670      15.80000000      42.09100000
DO           10    8.99000000       2.07227733       5.20000000      12.50000000
DOSAT         9   96.98143429      16.69117071      67.37494365     125.38941798
TOC           5   11.63800000       3.37597690       6.16000000      15.30000000
DOC           5    6.56600000       2.81077928       3.98000000      10.50000000
POC           5    5.07200000       3.29313225       0.90000000       8.18000000
N_P           3    1.18833782       1.65530239       0.16826923       3.09823678

                               STATION=G007

TP            3    0.12483333       0.03951687       0.08600000       0.16500000
OP            2    0.03050000       0.01909188       0.01700000       0.04400000
NH3N          2    0.13000000       0.15556349       0.02000000       0.24000000
NO2NO3N       2    0.27000000       0.35355339       0.02000000       0.52000000
TALK          2   98.50000000       2.12132034      97.00000000     100.00000000
TKJEL         3    0.98333333       0.53928966       0.60000000       1.60000000
TEMP          9   19.13111111       7.71123157      10.24000000      31.40000000
PH            9    8.17777778       0.53253586       7.11000000       8.94000000
SECCHI        9   14.11111111       4.59468292       9.00000000      21.00000000
CHLA          7   17.46571429       7.62689727       8.40000000      28.66000000
DO            8    8.40000000       1.77361616       5.80000000      11.20000000
DOSAT         8   93.15621182      12.65716998      78.86131770     115.92401525
TOC           5    9.28800000       2.21060399       5.71000000      11.60000000
DOC           5    5.22600000       2.65595181       3.47000000       9.90000000
POC           5    4.06200000       2.17812523       1.70000000       6.17000000
N_P           2    4.58054797       6.01982819       0.32388664       8.83720930


                               STATION=G008

TP            2    0.17800000       0.02969848       0.15700000       0.19900000
OP            2    0.03300000       0.01131371       0.02500000       0.04100000
NH3N          2    0.24000000       0.19798990       0.10000000       0.38000000
NO2NO3N       2    0.15000000       0.04242641       0.12000000       0.18000000
TALK          2   88.00000000      19.79898987      74.00000000     102.00000000
TKJEL         2    1.10000000       0.42426407       0.80000000       1.40000000
TEMP         13   20.56153846       7.29134744      11.20000000      32.30000000
PH           13    8.09000000       0.76526684       7.20000000       9.80000000
SECCHI       12   15.66666667       7.74987781       7.00000000      30.00000000
CHLA         10   33.33530000      23.67145306       9.80000000      84.30000000
DO           13    8.55384615       2.07710351       5.20000000      12.80000000
DOSAT        13   96.16472573      20.84547727      59.99811138     133.59106934
TOC           5    9.85800000       3.02686637       5.28000000      13.70000000
DOC           5    5.38000000       2.21626939       3.42000000       9.20000000
POC           4    4.11250000       1.56621359       1.86000000       5.49000000
N_P           2    2.14800115       0.51556805       1.78343949       2.51256281

                               STATION=G009

TP            2    0.16275000       0.02651650       0.14400000       0.18150000
OP            2    0.03675000       0.00671751       0.03200000       0.04150000
NH3N          2    0.19750000       0.19445436       0.06000000       0.33500000
NO2NO3N       2    0.17250000       0.08131728       0.11500000       0.23000000
TALK          2   83.00000000      18.38477631      70.00000000      96.00000000
TKJEL         2    1.02500000       0.31819805       0.80000000       1.25000000
TEMP         14   20.44011905       7.20035453      10.06666667      31.90000000
PH           14    8.00785714       0.52486890       7.28000000       9.00000000
SECCHI       14   15.50000000       6.21103237       8.00000000      30.00000000
CHLA         10   27.69310000      18.54395153      12.70000000      70.60000000
DO           14    8.58571429       2.05682995       4.80000000      12.60000000
DOSAT        14   96.25890782      22.25245859      63.40788313     132.28327902
TOC           5    9.48400000       2.52884954       5.22000000      11.60000000
DOC           5    6.47800000       4.93986032       3.27000000      15.20000000
POC           3    4.00333333       1.77849187       1.95000000       5.06000000
N_P           2    2.24661387       0.32912282       2.01388889       2.47933884
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                 ATCHAFALAYA STATION MEANS FOR ALL YEARS
                             STATION=G010

VARIABLE     N        MEAN          STANDARD          MINIMUM          MAXIMUM
                                    DEVIATION          VALUE            VALUE

TP           3     0.14722222      0.04169810      0.10100000      0.18200000
OP           2     0.05783333      0.03559104      0.03266667      0.08300000
NH3N         2     0.21333333      0.19327585      0.07666667      0.35000000
NO2NO3N      2     0.20166667      0.03064129      0.18000000      0.22333333
TALK         2    85.75000000     11.66726189     77.50000000     94.00000000
TKJEL        3     1.12222222      0.30792014      0.76666667      1.30000000
TEMP         9    20.64814815      7.31739008     10.60000000     30.75000000
PH           9     8.09925926      0.45158064      7.30000000      8.60000000
SECCHI       9    11.77777778      3.56292639      7.00000000     18.00000000
CHLA         7    24.63457143     14.06101109      3.20000000     47.10000000
DO           8     7.95416667      1.50606578      6.13333333     10.30000000
DOSAT        8    91.83602181     14.33570341     70.38602553    106.73526391
TOC          3     7.86666667      2.59170472      5.54000000     10.66000000
DOC          3     6.39000000      4.02545650      3.57000000     11.00000000
POC          2     2.38500000      0.58689863      1.97000000      2.80000000
N_P          2     2.40142211      0.72219051      1.89075630      2.91208791

                             STATION=G011

TP           2     0.15525000      0.04348707      0.12450000      0.18600000
OP           2     0.04600000      0.02121320      0.03100000      0.06100000
NH3N         2     0.14750000      0.18031223      0.02000000      0.27500000
NO2NO3N      2     0.45500000      0.00707107      0.45000000      0.46000000
TALK         2    88.00000000      9.89949494     81.00000000     95.00000000
TKJEL        2     0.72500000      0.10606602      0.65000000      0.80000000
TEMP         9    21.33907407      7.00286931     10.20000000     31.25000000
PH           9     8.41611111      0.47889050      7.60000000      8.94500000
SECCHI       9    15.77777778      4.54911469      8.00000000     24.00000000
CHLA         8    20.65000000     10.49099190      4.00000000     38.28300000
DO           8     8.75625000      1.51219743      7.25000000     11.60000000
DOSAT        8   102.76198321     14.67212359     87.21746642    127.06805479
TOC          5    10.81000000      4.19035201      5.19000000     16.80000000
DOC          5     8.84400000      3.08191986      3.29000000     10.90000000
POC          3     4.33333333      2.13619600      1.90000000      5.90000000
N_P          2     4.21524809      2.38771062      2.52688172      5.90361446


                             STATION=G012

TP           3     0.15133333      0.04473626      0.11300000      0.20000000
OP           2     0.03900000      0.02474874      0.02150000      0.05650000
NH3N         3     0.16000000      0.20880613      0.02000000      0.40000000
NO2NO3N      3     0.14166667      0.12789970      0.02000000      0.27500000
TALK         3    94.66666667     15.90859307     84.50000000    113.00000000
TKJEL        3     1.10333333      0.42524503      0.70000000      1.50000000
TEMP        11    19.81212121      7.24857343     10.00000000     31.00000000
PH          11     8.44106061      0.41433097      7.88500000      9.35000000
SECCHI      11    20.72727273     17.79376806      9.00000000     73.00000000
CHLA        10    23.84050000      7.94392972     12.78000000     34.00000000
DO          10     8.86833333      1.35091304      7.20000000     11.20000000
DOSAT       10   100.33979893     13.54031082     85.07565438    129.32110419
TOC          5     9.65400000      2.34850591      6.05000000     12.20000000
DOC          4     7.83250000      6.02694713      3.82000000     16.50000000
POC          3     3.90000000      2.10900450      2.23000000      6.27000000
N_P          3     1.81391683      0.99440464      0.71428571      2.65000000

                             STATION=G013

TP           3     0.18400000      0.03807493      0.18200000      0.22150000
OP           3     0.04350000      0.01575595      0.02750000      0.05900000
NH3N         3     0.12833333      0.13156114      0.04500000      0.28000000
NO2NO3N      3     0.10500000      0.07549834      0.02500000      0.17500000
TALK         3    98.16666667     17.48094200     85.00000000    118.00000000
TKJEL        3     1.05000000      0.18027756      0.85000000      1.20000000
TEMP         9    21.17092593      6.86104923     10.42500000     30.80000000
PH           9     7.98074074      0.83738768      6.60000000      9.35000000
SECCHI       9    12.33333333      2.87228132      7.00000000     16.00000000
CHLA         6    18.21116667      7.06633117      9.20200000     25.70000000
DO           9     6.96296296      3.00460038      0.90000000     12.00000000
DOSAT        9    78.00481152     30.12805816     11.31742560    114.42072831
TOC          5    12.08200000      3.07345408      8.18000000     16.80000000
DOC          5     8.83600000      7.83184078      4.57000000     22.80000000
POC          3     5.08666667      2.62787620      2.24000000      7.42000000
N_P          3     1.19166641      0.61306300      0.55921053      1.78329571
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ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=G014

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.14933333	0.05405739	0.11000000	0.21200000
OP	3	0.03344444	0.01547671	0.02166667	0.05100000
NH3N	3	0.15111111	0.20402433	0.03000000	0.38666667
NO2NO3N	3	0.14333333	0.09207485	0.04000000	0.21666667
TALK	3	89.77777778	5.60092505	83.66666667	94.66666667
TKJEL	3	1.04444444	0.36717137	0.66666667	1.40000000
TEMP	12	19.74777778	6.85916600	10.00666667	30.06666667
PH	12	8.34486111	0.38496455	7.80333333	9.01500000
SECCHI	12	14.41666667	4.54109254	9.00000000	24.00000000
CHLA	9	21.95666667	9.67435560	6.14500000	35.35000000
DO	12	8.62888889	1.89720000	5.83333333	12.40000000
DOSAT	12	94.78864337	12.26058163	71.14922917	113.51567928
TOC	5	10.38400000	4.80285644	6.20000000	18.65000000
DOC	5	5.50400000	2.66455062	2.51000000	9.30000000
POC	3	3.61000000	2.33411654	1.20000000	5.86000000
N_P	3	1.76538370	0.98642779	0.69696970	2.64150943

STATION=G015

TP	4	0.26875000	0.08891001	0.18400000	0.38800000
OP	4	0.09758333	0.07879339	0.04566667	0.21466667
NH3N	4	0.08833333	0.01232283	0.08000000	0.10666667
NO2NO3N	4	0.13833333	0.07495678	0.06666667	0.22000000
TALK	4	87.91666667	9.75771300	73.33333333	93.66666667
TKJEL	4	0.80000000	0.12765695	0.70000000	0.96666667
TEMP	4	20.69166667	3.68242824	16.16666667	24.50000000
PH	4	7.40833333	0.30595933	7.00000000	7.73333333
SECCHI	4	13.00000000	5.77350269	8.00000000	18.00000000
CHLA	4	7.67500000	4.79887140	3.40000000	14.10000000
DO	4	3.53333333	3.10316445	1.33333333	8.13333333
DOSAT	4	38.86851155	31.37811106	16.40780162	85.35193131
TOC	5	14.04000000	4.25887309	9.10000000	18.90000000
DOC	4	7.42500000	0.41932485	7.00000000	8.00000000
POC	4	7.17500000	4.90807150	1.10000000	11.50000000
N_P	4	0.93697589	0.44028822	0.38659794	1.48260212

STATION=H001

TP	11	0.17901818	0.10269198	0.07950000	0.38800000
OP	11	0.05636364	0.02476274	0.02233333	0.10800000
NH3N	11	0.12484848	0.13916907	0.02666667	0.49000000
NO2NO3N	11	0.72454545	0.28251459	0.38000000	1.40000000
TALK	11	84.59090909	22.89084771	56.00000000	124.50000000
TKJEL	11	0.66212121	0.22312066	0.20000000	1.00000000
TEMP	15	15.29311111	7.42153435	5.50000000	31.80000000
PH	15	7.65000000	0.33296229	7.30000000	8.03333333
SECCHI	13	10.07692308	8.85180226	4.00000000	24.00000000
CHLA	13	7.00615385	7.14066120	0.80000000	27.10000000
DO	14	8.13357143	2.46334812	2.00000000	10.90000000
DOSAT	14	82.53823933	21.45198044	34.57347883	105.10662103
TOC	11	7.34181818	1.78167796	4.51000000	9.80000000
DOC	12	4.09166667	1.69216286	2.55000000	7.70000000
POC	10	3.12600000	1.71099841	1.40000000	6.50000000
N_P	11	6.02987606	3.70229885	1.76623377	14.03846154

STATION=H002

TP	4	0.16681250	0.06795690	0.10500000	0.22625000
OP	4	0.03812500	0.00852814	0.02650000	0.04500000
NH3N	4	0.10750000	0.12867919	0.03000000	0.30000000
NO2NO3N	4	0.93125000	0.34035215	0.67000000	1.42500000
TALK	4	81.75000000	15.56438242	63.00000000	96.00000000
TKJEL	4	0.86875000	0.22855980	0.67500000	1.20000000
TEMP	8	16.77208333	8.67871213	6.00000000	31.60000000
PH	8	7.71031250	0.22863898	7.40000000	8.10000000
SECCHI	8	8.62500000	2.92464896	6.00000000	13.00000000
CHLA	6	3.91666667	3.44291643	1.10000000	10.40000000
DO	7	7.75238095	1.51178790	6.13333333	10.20000000
DOSAT	7	83.38685131	13.56224603	66.02660698	100.24733773
TOC	5	8.35200000	2.90641876	5.64000000	12.69000000
DOC	5	5.31000000	2.52536136	2.83000000	8.70000000
POC	5	3.04200000	1.87027271	0.50000000	5.64000000
N_P	4	6.86844429	2.93531036	3.46666667	10.63063063

ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=M003

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.15716667	0.04428557	0.12866667	0.22200000
OP	4	0.04733333	0.03962083	0.01900000	0.10600000
NH3N	4	0.20833333	0.18798148	0.03000000	0.40666667
NO2NO3N	4	0.53916667	0.26220398	0.39000000	0.84333333
TALK	4	78.41666667	11.90821379	70.00000000	95.66666667
TKJEL	4	0.89166667	0.46298148	0.53333333	1.56666667
TEMP	12	19.05722222	6.47436660	10.43666667	31.33333333
PH	12	7.36638889	0.58341983	6.07666667	7.80000000
SECCHI	12	13.08333333	6.35979321	5.00000000	27.00000000
CHLA	10	6.99870000	2.83686841	1.30000000	8.87500000
DO	12	5.20611111	2.17538568	1.33333333	8.00000000
DOSAT	12	59.06598270	21.80060841	17.18430692	66.32438831
TOC	5	9.85600000	4.05538284	5.43000000	16.48000000
DOC	5	5.46800000	1.72848778	3.54000000	7.40000000
POC	4	4.44500000	3.70396634	1.60000000	9.59000000
N_P	4	5.09808985	1.76263147	2.79279279	7.07253886

STATION=M004

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.22729167	0.08061814	0.15266667	0.33650000
OP	4	0.04966667	0.02309521	0.03150000	0.08350000
NH3N	4	0.15916667	0.14466756	0.05000000	0.36333333
NO2NO3N	4	0.67500000	0.42817009	0.25666667	1.25000000
TALK	4	85.20833333	17.78127136	70.50000000	108.33333333
TKJEL	4	0.94166667	0.31224990	0.60000000	1.35000000
TEMP	11	19.14090909	8.09305437	6.96000000	32.50000000
PH	11	7.83757576	0.61518803	6.31666667	8.70000000
SECCHI	11	9.54545455	2.69679945	6.00000000	13.00000000
CHLA	8	10.70875000	8.57335646	1.40000000	30.06000000
DO	11	7.45757576	2.41698117	3.73333333	11.40000000
DOSAT	11	80.07155775	19.47804036	45.71350097	108.11052490
TOC	5	10.42200000	5.87885788	5.41000000	20.30000000
DOC	5	4.79200000	1.50288722	3.54000000	7.30000000
POC	5	5.63000000	4.57996725	1.87000000	13.00000000
N_P	4	4.19841798	2.91224874	1.35306554	7.68392371

STATION=M005

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.19416667	0.04287493	0.15400000	0.24433333
OP	4	0.04950000	0.02210528	0.02800000	0.07633333
NH3N	4	0.14500000	0.13445363	0.06000000	0.36333333
NO2NO3N	4	0.41250000	0.16997549	0.17000000	0.54000000
TALK	4	87.00000000	8.28653526	80.00000000	99.00000000
TKJEL	4	1.12500000	0.34034296	0.80000000	1.60000000
TEMP	14	21.17404762	7.94101332	6.30000000	32.63333333
PH	14	7.89642857	0.31249674	7.40000000	8.36666667
SECCHI	12	10.08333333	2.71220586	6.00000000	15.00000000
CHLA	13	22.42215385	20.36965367	5.80000000	67.00000000
DO	13	7.07179487	1.97572519	4.20000000	10.73333333
DOSAT	13	80.62300761	13.32914084	56.40960051	101.41821174
TOC	4	9.32250000	1.35824338	7.50000000	10.73000000
DOC	4	4.84750000	2.37511228	3.41000000	8.40000000
POC	3	6.26666667	0.94854274	5.48000000	7.32000000
N_P	4	2.97606099	0.67093845	2.18281037	3.78787879

STATION=M006

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.21170833	0.04746858	0.17066667	0.27450000
OP	4	0.04212500	0.00728440	0.03150000	0.04800000
NH3N	4	0.13416667	0.15416141	0.04000000	0.36333333
NO2NO3N	4	0.74875000	0.47897146	0.40000000	1.43333333
TALK	4	83.37500000	12.41890360	69.50000000	97.00000000
TKJEL	4	1.04166667	0.41039728	0.73333333	1.63333333
TEMP	13	19.82948718	7.39765827	8.91666667	32.43333333
PH	13	7.84884615	0.41703505	7.06666667	8.65000000
SECCHI	13	9.00000000	2.85773003	5.00000000	14.00000000
CHLA	10	16.71850000	18.15838558	2.40000000	64.60000000
DO	12	8.35000000	2.56383157	3.46666667	14.30000000
DOSAT	12	94.12042559	30.88292476	47.61578643	182.68692169
TOC	5	8.94200000	3.82422803	4.37000000	14.60000000
DOC	5	4.39200000	2.02047488	1.78000000	9.20000000
POC	5	4.55000000	1.64424756	2.59000000	6.85000000
N_P	4	4.21244294	1.87459250	2.70871908	6.66666667

ATCHAFALAYA STATION MEANS FOR ALL YEARS

STATION=H007

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.20487500	0.02709666	0.18550000	0.24500000
OP	4	0.04350000	0.01205543	0.03050000	0.05650000
NH3N	4	0.13125000	0.16595054	0.04000000	0.38000000
NO2NO3N	4	0.75250000	0.51066013	0.30000000	1.50000000
TALK	4	81.12500000	12.67790072	67.00000000	93.50000000
TKJEL	4	1.03750000	0.28686524	0.70000000	1.30000000
TEMP	12	18.40500000	7.89029227	7.96000000	32.60000000
PH	12	7.73513889	0.48465882	7.10000000	8.72500000
SECCHI	12	7.91666667	3.82475985	5.00000000	18.00000000
CHLA	10	9.37060000	7.14879386	1.20100000	21.90000000
DO	12	8.39722222	1.88467816	4.70000000	11.30000000
DOSAT	12	89.80260539	16.13053065	64.70246563	130.62183189
TOC	5	9.46400000	1.56458621	7.63000000	11.30000000
DOC	5	5.07000000	2.22735269	2.87000000	8.70000000
POC	5	4.39400000	1.57635021	2.60000000	6.30000000
N_P	4	4.46531673	2.61594373	2.69387755	8.35579515

STATION=H008

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.16625000	0.02309581	0.13400000	0.18850000
OP	4	0.03825000	0.01061838	0.02950000	0.05100000
NH3N	4	0.11750000	0.16879475	0.02000000	0.37000000
NO2NO3N	4	0.55375000	0.55859012	0.06000000	1.30000000
TALK	4	83.25000000	19.57251474	62.00000000	109.00000000
TKJEL	4	1.05000000	0.32914029	0.70000000	1.40000000
TEMP	10	18.51000000	7.55295674	10.40000000	32.50000000
PH	10	7.69400000	0.38240322	7.14000000	8.20500000
SECCHI	10	7.40000000	1.50554531	5.00000000	10.00000000
CHLA	8	10.09750000	10.42886348	1.38000000	30.00000000
DO	9	7.70000000	1.27867119	5.60000000	9.60000000
DOSAT	9	84.50861907	9.56932281	72.57250905	98.24325532
TOC	5	8.55800000	2.64792749	5.74000000	11.37000000
DOC	5	4.54000000	1.35234981	3.61000000	6.90000000
POC	5	4.01800000	2.57720197	2.10000000	7.15000000
N_P	4	3.77881057	2.67105990	0.67164179	7.16180371

STATION=H009

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.13087500	0.04780233	0.08950000	0.18900000
OP	4	0.02712500	0.01785299	0.01000000	0.04400000
NH3N	4	0.13375000	0.19093520	0.03000000	0.42000000
NO2NO3N	4	0.23625000	0.20254115	0.02000000	0.49500000
TALK	4	87.00000000	13.29160136	69.00000000	98.00000000
TKJEL	4	0.93750000	0.18874586	0.75000000	1.10000000
TEMP	11	19.63166667	7.05888876	10.99000000	32.80000000
PH	11	7.64500000	0.44024425	7.00000000	8.34000000
SECCHI	11	10.00000000	2.23606798	6.00000000	13.00000000
CHLA	9	12.96211111	10.40728874	0.63900000	37.00000000
DO	11	7.92121212	2.70695699	2.40000000	11.80000000
DOSAT	11	86.22569499	25.06701522	33.12791464	131.46894749
TOC	5	9.29600000	2.29963693	5.64000000	11.37000000
DOC	5	7.67200000	4.62619930	3.68000000	15.10000000
POC	2	3.61500000	2.34052345	1.96000000	5.27000000
N_P	4	3.36928989	2.37369029	0.26455026	6.03351988

STATION=H010

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.86200000	0.60478426	0.19400000	1.26000000
OP	3	0.05200000	0.05632051	0.01000000	0.11600000
NH3N	3	0.33000000	0.34655447	0.12000000	0.73000000
NO2NO3N	3	0.14666667	0.02516611	0.12000000	0.17000000
TALK	3	94.00000000	25.94224354	73.00000000	123.00000000
TKJEL	3	9.70000000	10.33295698	3.00000000	21.60000000
TEMP	4	17.78750000	6.81693663	9.50000000	25.30000000
PH	7	7.71142857	0.38817644	7.17000000	8.40000000
SECCHI	1	8.00000000	.	8.00000000	8.00000000
CHLA	4	48.99750000	58.15189320	5.40000000	131.90000000
DO	7	6.25714286	3.67462340	0.80000000	9.80000000
DOSAT	4	71.73605203	34.66393548	19.78508513	90.98796131
TOC	3	31.63333333	5.97837213	24.96000000	36.50000000
DOC	4	14.39500000	11.50889946	3.28000000	30.50000000
POC	3	16.74000000	12.11080509	2.94000000	25.60000000
N_P	3	1.06713304	0.30564267	0.71428571	1.25000000

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                    ATCHAFALAYA STATION MEANS FOR ALL YEARS
                                STATION=H011

VARIABLE      N          MEAN          STANDARD          MINIMUM          MAXIMUM
                                      DEVIATION           VALUE            VALUE

TP            4      0.12362500      0.01592365       0.11200000       0.14700000
OP            4      0.02187500      0.01340631       0.01100000       0.03850000
NH3N          4      0.13750000      0.21230874       0.03000000       0.45500000
NO2NO3N       4      0.33875000      0.38893819       0.02000000       0.90000000
TALK          4     80.12500000      9.76707906      69.00000000      92.00000000
TKJEL         4      1.07500000      0.23629078       0.90000000       1.40000000
TEMP         10     19.36100000      7.50176675      10.80000000      32.50000000
PH           10      7.62100000      0.31605907       6.97000000       8.01000000
SECCHI        9      9.33333333      1.93649167       6.00000000      12.00000000
CHLA          7     14.63857143     13.82282223       1.70000000      42.60000000
DO           10      7.79800000      1.85838191       4.80000000      10.35000000
DOSAT        10     84.87741713     13.98823309      65.99072289     111.70044644
TOC           5     10.78200000      2.61243568       7.42000000      13.23000000
DOC           5      5.17200000      2.29132494       2.65000000       8.80000000
POC           4      5.38500000      1.53176369       4.40000000       7.67000000
N_P           4      3.65878169      2.76463629       0.35714286       6.49659864

                                STATION=H012

TP            3      0.15100000      0.04156922       0.12700000       0.19900000
OP            3      0.01766667      0.01588500       0.00800000       0.03600000
NH3N          4      0.10500000      0.15695010       0.02000000       0.34000000
NO2NO3N       4      0.28375000      0.41290384       0.02000000       0.90000000
TALK          4     79.75000000      5.90903263      74.00000000      88.00000000
TKJEL         3      1.53333333      0.77674535       0.90000000       2.40000000
TEMP         11     19.27969697      7.08360414      11.23000000      31.70000000
PH           11      7.67181818      0.33721857       7.00000000       8.10000000
SECCHI       10     13.40000000      8.00277730       9.00000000      36.00000000
CHLA          9     15.33955556     10.73499333       1.70000000      31.80000000
DO           11      8.08181818      1.64366553       4.80000000      11.00000000
DOSAT        10     86.74589766     14.64765816      65.28249587     108.74638880
TOC           4     12.74000000      4.99047092       7.00000000      19.10000000
DOC           5      5.57000000      3.21661313       2.68000000      11.10000000
POC           4      6.97500000      2.94660822       2.60000000       9.00000000
N_P           3      3.55379258      3.38698180       1.02362205       7.40157480


                                STATION=H013


TP            3      0.14366667      0.04314317       0.11300000       0.19300000
OP            3      0.01433333      0.00750555       0.00700000       0.02300000
NH3N          3      0.13666667      0.17672958       0.02000000       0.34000000
NO2NO3N       3      0.17666667      0.17785762       0.02000000       0.37000000
TALK          3     78.66666667     10.80396750      65.00000000      86.00000000
TKJEL         3      1.33333333      0.37859389       0.90000000       1.60000000
TEMP         10     19.31633333      7.33971800      11.43000000      31.80000000
PH           10      7.95300000      0.45026042       6.99000000       8.60000000
SECCHI       10     13.10000000      3.14289322       8.00000000      18.00000000
CHLA          8     30.10625000     24.48977101       4.75000000      81.10000000
DO            9      8.46666667      1.72916165       6.00000000      10.80000000
DOSAT         9     94.35611909     17.26892513      71.80238412     119.48404567
TOC           4     14.27250000      5.66802361       8.10000000      21.30000000
DOC           5      6.53200000      3.80040393       3.37000000      13.10000000
POC           3      7.58000000      5.29728232       2.00000000      12.54000000
N_P           3      2.24798447      1.96487845       0.32000000       4.24778761
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APPENDIX B. GEOGRAPHICAL MEANS

This appendix was generated by computer. Because of this it was necessary to print alphabetic characters in upper case without subscripts, and parameter values are given to 8 decimal places. Parameter means are presented for 20 geographical areas of the Atchafalaya Basin with the number of stations located within the area (N), standard deviation of the geographical mean, and minimum and maximum station means. The 20 geographical areas consist of the leveed Atchafalaya system, West Atchafalaya Floodway, Morganza Floodway, Fordouche, Atchafalaya Basin Floodway exclusive of Fordouche, Upper Flats, Buffalo Cove, Upper Belle River, Grand Lake, inlet, outlet, outside leveed Atchafalaya system, Courtableau, Fausse Point Basin exclusive of Bayou Teche, Bayou Teche, south of Morgan City, industrial area, Bayou Penchant, Verret Basin, and Pat Bay. These areas are described in the section of the report entitled Geographical Differences.

Values for TP, OP, NH_3, NO_2NO_3N, TALK, TKJEL, DO, TOC, DOC and POC are given in mg/l; TEMP is given in degrees Celsius; PH in standard units; SECCHI in inches; CHLA in µg/l; and DOSAT in percent, while N-P is a unitless ratio.

LEVEED ATCHAFALAYA SYSTEM

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	78	0.19411442	0.07443462	0.10480303	0.43033333
OP	77	0.06343625	0.03502041	0.01975000	0.23630000
NH3N	78	0.12588165	0.04198549	0.03833333	0.23666667
NO2NO3N	78	0.29932934	0.21896539	0.03850000	1.01000000
TALK	78	92.58213051	19.09492163	64.16666667	166.64814815
TKJEL	78	0.76780653	0.20972074	0.47500000	1.50000000
TEMP	78	18.68277604	1.65133109	14.15000000	26.67000000
PH	78	7.27707309	0.23570054	6.85444444	8.08750000
SECCHI	78	19.05349238	9.30156157	6.25000000	54.09090909
CHLA	74	8.48117756	6.06109903	1.07250000	39.73333333
DO	77	5.79440401	1.42469157	2.68333333	8.40952381
DOSAT	77	61.45393808	15.49088820	29.99471505	89.36954108
TOC	79	10.24276173	3.02401581	6.07000000	19.84200000
DOC	78	6.28217128	1.84441385	3.30000000	10.98500000
POC	69	4.74780348	2.08158315	1.35000000	11.68333333
N_P	78	3.19407294	1.95085461	0.67310305	13.58153025

WEST ATCHAFALAYA FLOODWAY

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	7	0.26987564	0.08340516	0.11035000	0.37814778
OP	7	0.10462468	0.03227029	0.03405000	0.13000000
NH3N	7	0.15548627	0.06489863	0.03833333	0.22748889
NO2NO3N	7	0.16439974	0.11872955	0.03850000	0.41291667
TALK	7	104.62354978	27.68883485	64.16666667	148.23888889
TKJEL	7	0.95959043	0.15707242	0.69833333	1.14166667
TEMP	7	18.77963935	1.36985612	16.60250000	20.38888889
PH	7	7.22828661	0.18360948	6.86708333	7.42175000
SECCHI	7	14.33391331	5.94906116	8.88888889	25.88888889
CHLA	7	7.84714239	2.63119000	2.87142857	10.79983333
DO	7	5.48070465	1.40691086	4.08857143	7.85111111
DOSAT	7	56.43944329	16.13926290	42.46801751	87.83156811
TOC	7	14.64572222	3.56478701	10.03333333	19.84200000
DOC	7	8.29995238	1.90564752	5.47800000	10.98500000
POC	7	6.47125000	3.00404497	3.15666667	10.77400000
N_P	7	1.37875767	0.52195412	0.67310305	2.21939889

MORGANZA FLOODWAY

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	1	0.34304630	.	0.34304630	0.34304630
OP	1	0.13711111	.	0.13711111	0.13711111
NH3N	1	0.13766667	.	0.13766667	0.13766667
NO2NO3N	1	0.30016667	.	0.30016667	0.30016667
TALK	1	114.92500000	.	114.92500000	114.92500000
TKJEL	1	1.08333333	.	1.08333333	1.08333333
TEMP	1	18.52450000	.	18.52450000	18.52450000
PH	1	6.85444444	.	6.85444444	6.85444444
SECCHI	1	7.44444444	.	7.44444444	7.44444444
CHLA	1	7.41887500	.	7.41887500	7.41887500
DO	1	6.47733333	.	6.47733333	6.47733333
DOSAT	1	68.59959709	.	68.59959709	68.59959709
TOC	1	18.98000000	.	18.98000000	18.98000000
DOC	1	7.97200000	.	7.97200000	7.97200000
POC	1	11.00800000	.	11.00800000	11.00800000
N_P	1	1.07752800	.	1.07752800	1.07752800

FORDOUCHE

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	14	0.21897520	0.05864023	0.12980000	0.36033333
OP	14	0.07756861	0.02610118	0.04140000	0.13131746
NH3N	14	0.14030077	0.02585205	0.11000000	0.19333333
NO2NO3N	14	0.16884093	0.05883363	0.07555556	0.28484127
TALK	14	82.32505266	13.01009470	64.58333333	99.38888889
TKJEL	14	0.93426208	0.18921206	0.78500000	1.30000000
TEMP	14	18.83400342	1.87275258	14.15000000	21.29142857
PH	14	7.21328205	0.17386140	6.94616667	7.63000000
SECCHI	14	18.64363662	6.19787753	12.00000000	28.96527778
CHLA	12	9.25701274	4.82004861	3.19657143	17.40676984
DO	14	4.98873574	1.06397040	3.26666667	6.85333333
DOSAT	14	52.40010912	12.20793330	31.77847961	78.76895065
TOC	14	12.13028779	1.28909141	10.43200000	14.81000000
DOC	14	8.27582341	1.34763778	6.74200000	10.78400000
POC	13	4.83498352	1.22275223	2.92000000	8.08428571
N_P	14	1.76934445	0.51488859	0.86230111	2.58998424

ATCHAF BASIN FLOWY LESS FORDOUCHE

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	56	0,17576957	0.06746317	0.10480303	0,43033333
OP	55	0,05325722	0.03112270	0.01975000	0,23630000
NH3N	56	0,11036585	0.04032299	0.05416667	0,23666667
NO2NO3N	56	0,34880269	0.23504901	0.06666667	1,01000000
TALK	56	93,24224275	18.22261755	71,04166667	166,64814815
TKJEL	56	0,69658524	0.17808279	0.47500000	1.50000000
TEMP	56	18,63568764	1.66560461	16,08114583	26,67000000
PH	56	7,30666610	0.24794397	6.89000000	8.08750000
SECCHI	56	19,95320813	10.10118509	6.25000000	54,09090909
CHLA	54	8,41063176	6,69167389	1,07250000	39,73333333
DO	55	6,02699168	1,45583045	2,68333333	8,40952381
DOSAT	55	64,26683645	15.47242645	29.99471505	89,36954108
TOC	57	9,08515951	2.22458881	6.07000000	16,48400000
DOC	56	5,50136010	1.31704079	3.30000000	8,96666667
POC	48	4,34243546	1.81358798	1.35000000	11,68333333
N_P	56	3,81496492	1.95594429	0.74644484	13,58153025

UPPER FLATS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	5	0,12404307	0.02339935	0,10650000	0.16175000
OP	5	0,04813896	0.01221454	0.03516667	0.06366667
NH3N	5	0,08441991	0.02048699	0.08416667	0.10583333
NO2NO3N	5	0,19575253	0.07425991	0.15777778	0.32848485
TALK	5	91,91507937	2,10627131	88.16666667	93,14285714
TKJEL	5	0,70063492	0.08332842	0,58333333	0,78888889
TEMP	5	19,90119963	0.40953736	19,47333333	20,49897436
PH	5	7,26770696	0.11919771	7,13782051	7.46214286
SECCHI	5	29,05098901	3.88502754	24,76923077	33,60000000
CHLA	5	7,60232000	9.37367162	1,07250000	23,47350000
DO	5	5,04083333	0.34315619	4.53472222	5.50000000
DOSAT	5	56,13090444	4.27994927	50,00355017	61,92140602
TOC	5	9,10396667	0,99831876	7.79000000	10,30250000
DOC	5	6,77206667	1.13734298	5.43000000	7,94333333
POC	4	3,60183333	0,66109480	3,05200000	4.49333333
N_P	5	2,98673893	0,65875573	2,32819587	3.96127253

BUFFALO COVE

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	16	0,20299471	0,08712842	0,12098333	0.43033333
OP	16	0.07018809	0,05096082	0.02100000	0.23630000
NH3N	16	0,11285412	0,03571723	0,07037037	0.19314815
NO2NO3N	16	0,27836593	0,11019118	0.07809524	0.43552083
TALK	16	101,16238673	23,93755291	74,84393939	166,64814815
TKJEL	16	0,71937595	0,16521823	0,55476190	1.23703704
TEMP	16	18,80147240	1,50741890	16,08114583	20,98777778
PH	16	7,12711561	0,14798452	6,89000000	7,39266667
SECCHI	16	22,41669868	12,77783424	8,96000000	54,09090909
CHLA	15	9,63578456	5,38857396	2,78140000	27,63333333
DO	15	5,35106225	1,53133594	2,68333333	7,44305556
DOSAT	15	56,18293255	17.12283848	29,99471505	79,00080276
TOC	16	10,36379376	2.44962059	7.44000000	16,48400000
DOC	15	5,96536977	1.28331720	3.80250000	8.74000000
POC	14	5,26219076	2,19107699	2,60125000	11,68333333
N_P	16	2,95090749	1,01766223	1,63970417	4,65792064

UPPER BELLE RIVER

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	19	0,15188184	0,05597703	0.10480303	0.33072222
OP	18	0,04538481	0,00772053	0.03544444	0,06322222
NH3N	19	0,13191492	0,04538332	0,06437500	0,23666667
NO2NO3N	19	0,27351754	0,14913244	0,06666667	0,60833333
TALK	19	87,30425084	3,18114683	79,94444444	91,50000000
TKJEL	19	0,62953017	0,07913796	0,50454545	0,80000000
TEMP	19	18,44669804	0,66248970	17,10458333	19,49051282
PH	19	7,21271392	0,13278433	7,03533333	7,51416667
SECCHI	19	20,65133624	7,82820691	9,36363636	36,00000000
CHLA	19	6,70337671	2,25319031	3,15640000	10,53800000
DO	19	5,79674756	1,04154969	3,97116667	7,82500000
DOSAT	19	60,93670576	11.26711465	40,76714721	81,57410622
TOC	19	7,86447368	1,54817820	6,07000000	12,64500000
DOC	19	5,24381579	0,90360275	3,30000000	7.10750000
POC	14	3,18326190	1,23737528	1,35000000	6,40000000
N_P	19	3,75970197	1,26669810	1,42152607	6,55613824

GRAND LAKE

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	2	0.15084259	0.04170621	0.12135185	0.18033333
OP	2	0.03735185	0.00104757	0.03661111	0.03809259
NH3N	2	0.08240741	0.00811863	0.07666667	0.08814815
NO2NO3N	2	0.50472222	0.29737769	0.29444444	0.71500000
TALK	2	85.18518519	2.38321174	83.50000000	86.87037037
TKJEL	2	0.50092593	0.01702294	0.48888889	0.51296296
TEMP	2	17.54345238	1.18069997	16.70857143	18.37833333
PH	2	7.67375000	0.01355288	7.66416667	7.68333333
SECCHI	2	10.90000000	4.10121933	8.00000000	13.80000000
CHLA	2	8.55575000	1.27526708	7.65400000	9.45750000
DO	2	8.09476190	0.44514055	7.78000000	8.40952381
DOSAT	2	84.69305456	2.98880801	82.57964815	86.80646097
TOC	2	8.50075000	0.99454569	7.79750000	9.20400000
DOC	2	3.97600000	0.78630274	3.42000000	4.53200000
POC	2	4.91500000	1.42835570	3.90500000	5.92500000
N_P	2	4.90068311	1.88021329	3.57117154	6.23019467

COURTABLEAU

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.22908796	0.04891543	0.17272222	0.26041667
OP	3	0.08679769	0.01344617	0.07638889	0.10197917
NH3N	3	0.14201389	0.05055093	0.09250000	0.19354167
NO2NO3N	3	0.23674537	0.04411384	0.18611111	0.26687500
TALK	3	102.97750000	31.00749111	70.33333333	132.03666667
TKJEL	3	0.73518519	0.10097264	0.62222222	0.81666667
TEMP	3	19.50467019	0.92748721	18.59200000	20.44629630
PH	3	7.24399206	0.11839867	7.12916667	7.36566667
SECCHI	3	11.21798942	1.57450503	9.40000000	12.14285714
CHLA	3	2.60340476	0.05770908	2.55557143	2.66750000
DO	3	5.68897619	0.18149820	5.52633333	5.88476190
DOSAT	3	62.56553113	3.19044351	58.97380102	65.07099880
TOC	3	11.30109524	0.65276392	10.82400000	12.04500000
DOC	3	7.17583333	1.19677946	6.46200000	8.55750000
POC	2	5.15000000	0.59396970	4.73000000	5.57000000
N_P	3	1.75928028	0.02080426	1.73639764	1.77705481

FAUSSE POINT BASIN

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	5	0.25545833	0.03573132	0.21666667	0.29775000
OP	5	0.05156667	0.02060082	0.02450000	0.07241667
NH3N	5	0.13766667	0.01833949	0.11000000	0.15500000
NO2NO3N	5	0.19308333	0.06845112	0.11500000	0.28291667
TALK	5	75.88333333	12.12973848	58.75000000	90.41666667
TKJEL	5	1.28000000	0.32878934	0.95416667	1.82500000
TEMP	5	20.87598095	1.19144598	19.35523810	22.52166667
PH	5	7.86764815	0.39067264	7.26074074	8.26000000
SECCHI	5	8.07013709	0.78593109	7.12500000	9.00000000
CHLA	5	14.62445786	9.53334113	3.73671429	25.26312500
DO	5	7.78521905	1.35676851	5.89133333	9.20000000
DOSAT	5	87.17527074	15.78242124	65.37170289	101.66556583
TOC	5	12.65240000	1.21928106	10.75000000	14.02000000
DOC	5	6.37350000	1.02792205	4.95000000	7.47000000
POC	4	7.22250000	0.46853940	6.76250000	7.81500000
N_P	5	1.30172853	0.37446945	0.86938840	1.83471761

BAYOU TECHE

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.23533333	0.05106599	0.19435417	0.29254167
OP	3	0.06827083	0.02751894	0.04995833	0.09991667
NH3N	3	0.20468056	0.02318765	0.18154167	0.22791667
NO2NO3N	3	0.27020833	0.06845803	0.19875000	0.33520833
TALK	3	72.69444444	1.98358425	70.41666667	74.04166667
TKJEL	3	1.05972222	0.08181782	0.97291667	1.13541667
TEMP	3	21.87277778	0.50041906	21.34962963	22.34685185
PH	3	7.49345679	0.22194932	7.24185185	7.66148148
SECCHI	3	8.03703704	0.39020940	7.66666667	8.44444444
CHLA	3	8.19547619	2.16581238	5.69485714	9.47614286
DO	3	5.71234568	1.96440752	3.51296296	7.29259259
DOSAT	3	65.69444305	21.35527253	41.56848857	82.17345983
TOC	3	10.75305556	1.91736660	9.19000000	12.89250000
DOC	3	6.47333333	0.54519110	5.92000000	7.01000000
POC	3	4.04416667	1.59863288	2.98000000	5.88250000
N_P	3	2.09220092	0.59230382	1.45866163	2.63211803

INLET STATION

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	1	0.24151852	.	0.24151852	0.24151852
OP	1	0.04743137	.	0.04743137	0.04743137
NH3N	1	0.12480392	.	0.12480392	0.12480392
NO2NO3N	1	0.73156863	.	0.73156863	0.73156863
TALK	1	88.69607843	.	88.69607843	88.69607843
TKJEL	1	0.74215686	.	0.74215686	0.74215686
TEMP	1	15.24312500	.	15.24312500	15.24312500
PH	1	7.60601852	.	7.60601852	7.60601852
SECCHI	1	6.18181818	.	6.18181818	6.18181818
CHLA	1	7.48285714	.	7.48285714	7.48285714
DO	1	8.42814815	.	8.42814815	8.42814815
DOSAT	1	84.92732323	.	84.92732323	84.92732323
TOC	1	8.53647059	.	8.53647059	8.53647059
DOC	1	4.12222222	.	4.12222222	4.12222222
POC	1	4.57000000	.	4.57000000	4.57000000
N_P	1	4.16614826	.	4.16614826	4.16614826

OUTLET STATIONS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	3	0.19329352	0.02310444	0.17600000	0.21953333
OP	3	0.04448283	0.00474846	0.03900000	0.04726667
NH3N	3	0.15078704	0.02668848	0.12000000	0.16736111
NO2NO3N	3	0.71481481	0.04491877	0.68777778	0.76666667
TALK	3	80.90277778	5.52468856	76.00000000	86.88888889
TKJEL	3	0.79842593	0.09980549	0.73333333	0.91333333
TEMP	3	17.10921296	0.42944975	16.75166667	17.58555556
PH	3	7.63061728	0.05546732	7.57555556	7.68648148
SECCHI	3	17.02936508	14.28978044	6.25000000	33.23809524
CHLA	3	6.39715476	1.64703855	4.60825000	7.85071429
DO	3	7.88192333	0.50374341	7.32962963	8.31614035
DOSAT	3	81.73963934	6.41387883	74.45184184	86.52539944
TOC	3	8.10950000	1.81723222	6.13600000	9.71375000
DOC	3	4.61550000	0.49258527	4.16750000	5.14300000
POC	3	4.51532468	1.48814514	2.80000000	5.46142857
N_P	3	5.72441735	0.19447578	5.50047190	5.85078290

OUTSIDE LEVEED ATCHAFALAYA SYSTEM

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	36	0.20679604	0.07893128	0.12362500	0.56200000
OP	33	0.05395164	0.02302975	0.01433333	0.10197917
NH3N	34	0.15466215	0.04805148	0.08833333	0.33000000
NO2NO3N	34	0.30313929	0.22816314	0.06083333	0.93125000
TALK	34	88.88836649	16.31722524	58.75000000	132.03666667
TKJEL	36	1.28756535	1.46528867	0.62222222	9.70000000
TEMP	38	20.01561322	1.57329890	15.29311111	22.61559524
PH	38	7.77101814	0.34573516	7.12916667	8.44106061
SECCHI	37	12.65117844	7.35260212	7.12500000	50.94117647
CHLA	38	14.99086915	9.32291460	2.55557143	45.99750000
DO	38	7.21353395	1.44436123	3.51296296	9.20000000
DOSAT	38	80.10192138	15.94231195	38.86851155	102.76195321
TOC	38	11.41583712	3.86034276	7.34181818	31.63333333
DOC	38	6.55446739	1.85118249	4.09166667	14.39500000
POC	34	5.47304575	2.45093707	2.98000000	16.74000000
N_P	34	2.53653742	1.51212710	0.86938840	6.86844429

SOUTH OF MORGAN CITY

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	13	0.20141943	0.11278996	0.12362500	0.56200000
OP	13	0.03814336	0.01359581	0.01433333	0.05436364
NH3N	13	0.15159091	0.05958142	0.10500000	0.33000000
NO2NO3N	13	0.50150350	0.25436581	0.14666667	0.93125000
TALK	13	83.17365967	4.64497735	75.66666667	94.00000000
TKJEL	13	1.70750291	2.41100942	0.66212121	9.70000000
TEMP	13	18.73523519	1.47204214	15.29311111	21.17404762
PH	13	7.71084135	0.16936991	7.26638889	7.95300000
SECCHI	12	10.04700369	1.91022574	7.40000000	13.40000000
CHLA	13	15.62946250	11.62194561	3.91666667	45.99750000
DO	13	7.59003817	0.91723253	5.28611111	8.46666667
DOSAT	13	82.85065151	9.53947392	58.06598270	94.35611909
TOC	13	11.61401166	6.29106744	7.34181818	31.63333333
DOC	13	5.98862821	2.69558250	4.09166667	14.39500000
POC	12	6.01347222	3.66009228	3.04200000	16.74000000
N_P	13	3.96341855	1.50885621	1.06713304	6.86844429

INDUSTRIAL

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	4	0.19758333	0.03015118	0.15716667	0.22729167
OP	4	0.04715625	0.00351853	0.04212500	0.04966667
NH3N	4	0.16166667	0.03275187	0.13416667	0.20833333
NO2NO3N	4	0.59385417	0.14883707	0.41250000	0.74875000
TALK	4	83.50000000	3.69794112	78.41666667	87.00000000
TKJEL	4	1.00000000	0.10408330	0.89166667	1.12500000
TEMP	4	19.80041653	0.97894421	19.05722222	21.17404762
PH	4	7.71230984	0.29837276	7.26638889	7.89642857
SECCHI	4	10.17803030	1.34499748	9.00000000	12.08333333
CHLA	4	13.71202596	7.52433673	4.99870000	22.42215385
DO	4	7.04137044	1.28680472	5.28611111	8.35000000
DOSAT	4	78.22024341	14.92437222	58.06598270	94.12042559
TOC	4	9.63562500	0.64449300	8.94200000	10.42200000
DOC	4	4.87487500	0.44444092	4.39200000	5.46800000
POC	4	5.22291667	0.87808543	4.44500000	6.26666667
N_P	4	4.12125294	0.87176927	2.97606099	5.09808985

PENCHANT

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	7	0.21175595	0.15675100	0.12362500	0.56200000
OP	7	0.03067857	0.01415937	0.01433333	0.08200000
NH3N	7	0.15595238	0.07765617	0.10500000	0.33000000
NO2NO3N	7	0.35547619	0.22066338	0.14666667	0.75250000
TALK	7	82.98809524	5.96074710	75.66666667	94.00000000
TKJEL	7	2.38095238	3.23392916	0.93750000	9.70000000
TEMP	7	18.89874242	0.67083661	17.78750000	19.63166667
PH	7	7.71876938	0.11030605	7.62100000	7.95300000
SECCHI	6	10.19166667	2.54928639	7.40000000	13.40000000
CHLA	7	19.63029830	13.61790738	8.27060000	45.99750000
DO	7	7.80272315	0.74000157	6.25714286	8.46666667
DOSAT	7	85.46462934	6.95018111	71.73605202	94.35611909
TOC	7	13.82083333	8.11424053	8.55800000	31.63333333
DOC	7	6.99300000	3.42829584	4.54000000	14.39500000
POC	6	7.51533333	4.73081387	4.01800000	16.74000000
N_P	7	3.16301557	1.13623920	1.06713304	4.46531673

VERRET BASIN

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	12	0.17963742	0.04794650	0.12483333	0.26575000
OP	9	0.06238905	0.02064681	0.03344444	0.09758333
NH3N	10	0.15594147	0.04281184	0.08833333	0.25552579
NO2NO3N	10	0.13009127	0.04884521	0.06083333	0.24000000
TALK	10	103.45143849	11.71325290	87.91666667	124.33333333
TKJEL	12	1.03084105	0.26472859	0.76250000	1.76666667
TEMP	14	20.60878543	1.13046397	18.92776235	22.61559524
PH	14	7.96479747	0.35707792	7.40833333	8.44106061
SECCHI	14	17.81527095	9.87857806	11.77777778	50.94117647
CHLA	14	18.63936309	5.75756065	7.67500000	27.69310000
DO	14	7.30812379	1.63166177	3.53333333	8.99000000
DOSAT	14	81.86844761	18.49248564	38.86851155	102.76195321
TOC	14	10.95680047	1.95798268	7.86666667	15.54400000
DOC	14	7.02875673	1.33766682	5.22600000	9.78571429
POC	13	4.81533761	1.19191545	3.45250000	7.17500000
N_P	10	1.66547449	0.55661875	0.93697589	2.88423852

PAT BAY

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
TP	5	0.18748537	0.05757330	0.13494444	0.26575000
OP	5	0.06787808	0.02154781	0.04077778	0.09758333
NH3N	5	0.15732738	0.06218707	0.08833333	0.25552579
NO2NO3N	5	0.11918254	0.03472678	0.06083333	0.14541667
TALK	5	109.21398810	13.62698189	87.91666667	124.33333333
TKJEL	5	0.85735185	0.09359535	0.76250000	1.00000000
TEMP	5	20.74485485	1.65721399	18.92776235	22.61559524
PH	5	7.59739935	0.11828102	7.40833333	7.72084795
SECCHI	5	23.13397079	15.76296485	13.00000000	80.94117647
CHLA	5	12.71342205	2.94494593	7.67500000	15.33576923
DO	5	5.60459451	1.37912298	3.53333333	7.17520468
DOSAT	5	61.86852627	14.35210677	38.86851155	77.41831570
TOC	5	12.36050798	2.31193932	10.16307692	15.54400000
DOC	5	8.00801885	1.22020836	6.47017544	9.78571429
POC	5	5.23791111	1.57587350	3.45250000	7.17500000
N_P	5	1.56224031	0.43748634	0.93697589	2.04203186

APPENDIX C. PARAMETER MEANS BY SEASON FOR GEOGRAPHICAL AREAS OF THE ATCHAFALAYA BASIN

This appendix was generated by computer. Because of this it was necessary to print alphabetic characters in upper case without subscripts and paramete values are given to 8 decimal places. Seasonal means for 20 geographical areas of the Atchafalaya Basin are presented with the number of stations sampled (N), standard deviations of the means, minimum and maximum station means. Seasons of the year are designated as follows; season 1 = winter (December 21 to March 20), season 2 = spring (March 21 to June 20), season 3 = summer (June 21 to September 20), and season 4 = fall (September 21 to December 20). The 20 geographical areas consist of the leveed Atchafalaya system, West Atchafalaya Floodway, Morganza Floodway, Fordouche, Atchafalaya Basin Floodway exclusive of Fordouche, Upper Flats, Buffalo Cove, Upper Belle River, Grand Lake, inlet, outlet, outside the leveed Atchafalaya system, Courtableau, Fausse Point Basin exclusive of Bayou Teche, Bayou Teche, south of Morgan City, industrial area, Bayou Penchant, Verret Basin, and Pat Bay. These areas are described in the section of the report entitled Geographical Differences.

Values for TP, OP, NH_3N, NO_2NO_3N, TALK, TKJEL, DO, TOC, DOC and POC are given in mg/l; TEMP is given in degrees Celsius; PH in standard units; SECCHI in inches; CHLA in µg/l; DOSAT in percent, while N-P is a unitless ratio.

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                 SEASON MEANS          LEVEED ATCHAFALAYA SYSTEM
                                     SEASON= WINTER

VARIABLE          N           MEAN        STANDARD          MINIMUM          MAXIMUM
                                          DEVIATION           VALUE            VALUE

TP               59     0,20090620      0,12713232       0,04900000       0,85966667
OP               59     0,07509686      0,07653500       0,01500000       0,51900000
NH3N             59     0,09062779      0,04042119       0,04000000       0,26333333
NO2NO3N          59     0,25246829      0,21831239       0,02000000       0,78000000
TALK             59    67,23639965     18,66615333      26,00000000     115,75000000
TKJEL            59     0,70258071      0,22721351       0,33333333       1,60000000
TEMP             79    10,89359892      3,33709859       6,24500000      31,90000000
PH               79     7,22320704      0,28206026       6,63333333       7,96750000
SECCHI           77    23,54551768     28,42231947       4,00000000     163,00000000
CHLA             77     3,55441234      4,70197917       0,13100000      25,70000000
DO               77     6,88370954      2,01997254       2,60000000      10,50000000
DOSAT            77    63,17757960     17,62717485      24,44398047     100,37164264
TOC              24    12,23476389      5,25875769       5,10000000      25,30000000
DOC              24     8,47500000      4,19663498       3,81666667      20,30000000
POC              23     4,56736957      3,81541875       0,30000000      19,35000000
N_P              59     2,53658880      2,54383366       0,45192308      14,89795918

------------------------------- SEASON= SPRING ------------------------------

TP               79     0,23209402      0,08563595       0,06800000       0,47383333
OP               78     0,08105444      0,04628908       0,02783333       0,26183333
NH3N             80     0,07339906      0,05190522       0,02000000       0,25750000
NO2NO3N          80     0,37001161      0,32851825       0,02000000       1,50000000
TALK             80    79,17815724     18,90772688      40,66666667     130,13333333
TKJEL            79     0,75208484      0,20575445       0,40000000       1,32500000
TEMP             80    21,23820908      1,63053505      16,80000000      25,17500000
PH               81     7,17220777      0,23902167       6,59000000       7,90000000
SECCHI           80    18,68861607     10,71269839       4,50000000      44,00000000
CHLA             77     5,95173139      4,50099212       0,65000000      22,27866667
DO               80     4,57659301      1,78477273       1,13333333       8,10000000
DOSAT            79    51,53683240     19,39970280      13,33951673      89,27000827
TOC              81    10,36041329      4,17697372       5,21000000      24,96333333
DOC              81     6,99390888      2,62432003       1,58000000      14,40000000
POC              81     4,28081893      2,88150831       0,70000000      17,57500000
N_P              79     2,67783680      1,85203064       0,12718601       8,08171439

------------------------------- SEASON= SUMMER ------------------------------

TP               80     0,20020984      0,17320824       0,00600000       1,01000000
OP               78     0,04475513      0,03340300       0,00750000       0,16068333
NH3N             80     0,30396458      0,12655290       0,02500000       0,61000000
NO2NO3N          80     0,26771007      0,22965780       0,02000000       0,83000000
TALK             80   109,60369792     44,86197589      62,50000000     326,00000000
TKJEL            80     1,03356771      0,51497358       0,45000000       3,60000000
TEMP             75    30,05731963      3,33293399      16,56666667      35,15000000
PH               77     7,49322258      0,60365031       4,10000000       8,90000000
SECCHI           69    17,22584541      8,01812771       1,30000000      36,00000000
CHLA             70    15,38142976     16,47718160       0,60000000     100,50000000
DO               75     5,15797778      2,22082098       1,85000000      11,20000000
DOSAT            73    68,57367657     31,27098102      24,53276988     156,86300778
TOC              80    10,59235417      2,55917745       5,08000000      22,96000000
DOC              70     4,93914286      1,57196564       1,70000000       9,60000000
POC              56     5,72044643      2,29507383       1,60000000      16,74000000
N_P              80     4,58755903      5,89516813       0,35714286      48,33333333

------------------------------- SEASON=  FALL -------------------------------

TP               80     0,14676527      0,08122391       0,04400000       0,47116667
OP               79     0,04152443      0,03246025       0,01050000       0,19675000
NH3N             80     0,08671806      0,06675418       0,02000000       0,31222222
NO2NO3N          80     0,27953542      0,21638775       0,02000000       0,77000000
TALK             80   111,28378869     28,00973611      63,00000000     217,50000000
TKJEL            79     0,67949759      0,26739716       0,24000000       1,55000000
TEMP             79    15,47439321      3,53298594       9,50000000      31,10000000
PH               81     7,43494895      0,33089670       6,87583333       8,32500000
SECCHI           78    16,73760684     12,82394648       4,50000000      96,00000000
CHLA             74    10,05279730      7,16232898       1,38500000      36,90000000
DO               77     7,44423743      1,91173470       1,80000000      11,20000000
DOSAT            74    73,48166923     19,32263963      18,29513745     102,91389405
TOC              68     8,06784314      2,75051611       1,67000000      13,31000000
DOC              69     4,25880435      1,31799012       2,14000000       9,87000000
POC              54     4,37291667      1,76416382       0,07000000       8,23000000
N_P              79     2,90913042      2,00203001       0,28838779       8,72717451
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              SEASON MEANS        WEST ATCHAFALAYA FLOODWAY
                                  SEASON= WINTER

VARIABLE     N          MEAN         STANDARD          MINIMUM          MAXIMUM
                                     DEVIATION           VALUE            VALUE

TP           7    0.27843681       0.09570590       0.20325000       0.48755556
OP           7    0.13953571       0.04206605       0.05675000       0.17675000
NH3N         7    0.09805556       0.04505055       0.06666667       0.19555556
NO2NO3N      7    0.12492063       0.15801444       0.03000000       0.47444444
TALK         7   94.24206349      14.63336844      26.00000000      74.33333333
TKJEL        7    0.91150794       0.21209826       0.64166667       1.30000000
TEMP         7   10.70289683       0.76126060       9.87666667      11.75000000
PH           7    7.21785714       0.37007346       6.63333333       7.90000000
SECCHI       7   11.10714286       6.52536261       4.00000000      24.00000000
CHLA         7    2.20969048       2.86557685       0.20000000       7.25250000
DO           7    6.85476190       1.80971438       4.20000000       9.80000000
DOSAT        7   60.17416994      16.69004120      38.25707570      92.11016884
TOC          2   15.93125000       3.26860110      13.62000000      18.24250000
DOC          2    9.00550000       3.65540840       6.84500000      11.16600000
POC          2    5.93916667       0.47258303       5.60500000       6.27333333
N_P          7    0.70661466       0.31038399       0.45192308       1.35501931

------------------------------ SEASON= SPRING ------------------------------

TP           7    0.27782937       0.09627499       0.09200000       0.37822222
OP           7    0.10738532       0.04346626       0.03212500       0.15191667
NH3N         7    0.11802778       0.04825956       0.04125000       0.18750000
NO2NO3N      7    0.17607143       0.13206139       0.02750000       0.41000000
TALK         7   81.40634921      22.73796259      43.25000000     119.77777778
TKJEL        7    1.00928571       0.23011039       0.71666667       1.32500000
TEMP         7   21.83907143       2.49092247      18.60000000      25.17500000
PH           7    7.13547619       0.21454239       6.77500000       7.41666667
SECCHI       7   13.18571429       5.59178820       9.00000000      24.00000000
CHLA         5    5.35383333       4.74204785       2.07700000      13.58450000
DO           7    4.15416667       1.28119962       2.70000000       6.35000000
DOSAT        7   49.41736776      15.40104650      34.10398764      74.13819649
TOC          7   17.12095238       6.38760800       8.70000000      24.96333333
DOC          7   10.88238095       2.84669445       6.15000000      14.40000000
POC          7    6.94690476       6.02588955       1.70000000      17.57500000
N_P          7    1.13492838       0.56673717       0.52431338       2.22222222

------------------------------ SEASON= SUMMER ------------------------------

TP           6    0.27380625       0.23072183       0.12200000       0.73415417
OP           6    0.07548889       0.04478339       0.03650000       0.16068333
NH3N         6    0.19338889       0.19699043       0.02500000       0.45000000
NO2NO3N      6    0.08384722       0.13410711       0.02000000       0.35666667
TALK         6  147.17430556      62.21068748      76.00000000     260.73333333
TKJEL        6    1.03784722       0.25512258       0.80000000       1.46666667
TEMP         6   28.71151852       5.08489591      20.00000000      35.15000000
PH           6    7.55906944       0.33563013       7.25000000       8.17500000
SECCHI       6   21.11111111       8.80572205      11.00000000      33.00000000
CHLA         5   11.84560000       7.25421028       1.31000000      19.45000000
DO           6    5.58333333       2.74862632       3.72000000      10.76000000
DOSAT        6   71.39334967      40.66280878      48.15459851     153.30169284
TOC          7   11.24285714       1.10643142       9.83000000      12.60000000
DOC          7    5.54476190       1.85382873       3.80000000       9.10000000
POC          7    5.67428571       1.49156358       2.95000000       7.41000000
N_P          6    1.15793134       0.99233747       0.36895246       2.78431373

------------------------------ SEASON=  FALL ------------------------------

TP           7    0.21604492       0.08785408       0.06900000       0.32191667
OP           7    0.08847230       0.04172861       0.02066667       0.19250000
NH3N         7    0.19213889       0.09410648       0.02000000       0.31222222
NO2NO3N      7    0.20206746       0.17675716       0.02166667       0.58222222
TALK         7  133.94976190      49.64518803      71.95833333     217.50000000
TKJEL        7    0.91227778       0.16223218       0.56666667       1.05000000
TEMP         7   17.26007143       4.18335159      13.46500000      25.27500000
PH           7    7.23845238       0.29177458       6.87583333       7.61250000
SECCHI       7   15.70238095       6.24018097      10.00000000      28.66666667
CHLA         7   10.07642857       4.87540572       5.16500000      16.57500000
DO           7    6.35247619       1.78275415       4.32500000       8.23333333
DOSAT        6   61.35333345      16.81537238      43.00597399      82.83982179
TOC          6   11.00222222       1.41656496       9.83333333      13.31000000
DOC          6    4.92944444       0.74258233       3.76666667       6.04000000
POC          6    6.09583333       1.00130124       5.27000000       8.07000000
N_P          7    2.11275300       1.32098881       0.60646712       4.68892922
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                          SEASON MEANS                FORDOUCHE
                                   SEASON= WINTER

VARIABLE        N         MEAN          STANDARD
                                        DEVIATION        MINIMUM          MAXIMUM
                                                          VALUE            VALUE

TP             14     0,21495754      0,06262778      0,11200000      0,32800000
OP             14     0,08860873      0,03095577      0,04150000      0,15025000
NH3N           14     0,08472619      0,02275129      0,05000000      0,13500000
NO2NO3N        14     0,09311310      0,07233285      0,04000000      0,32333333
TALK           14    47,01329365      9,61340312     36,00000000     69,00000000
TKJEL          14     0,85644841      0,23552567      0,68750000      1,60000000
TEMP           14    11,29077778      1,69695077      8,67500000     15,17500000
PH             14     6,98277778      0,16250517      6,63333333      7,25000000
SECCHI         14    17,50669643     14,44359193      7,50000000     65,09375000
CHLA           13     2,77810043      4,24060586      0,26200000     16,12419444
DO             14     5,45357143      1,50485225      3,60000000      7,70000000
DOSAT          14    49,35191236     12,24272803     24,44398047     69,07389867
TOC             7    16,20190476      5,92958429     10,65000000     25,30000000
DOC             7    11,95333333      4,90482746      7,66500000     20,30000000
POC             7     5,69976190      6,15925684      1,70000000     19,35000000
N_P            14     0,82074702      0,23782034      0,57603687      1,47058824

------------------------------- SEASON= SPRING -------------------------------

TP             13     0,25152137      0,08991351      0,15650000      0,47383333
OP             13     0,11041871      0,04919664      0,05083333      0,24466667
NH3N           13     0,11188309      0,04932775      0,05166667      0,21791667
NO2NO3N        13     0,19824664      0,10245924      0,02000000      0,39309524
TALK           13    70,96643773      7,16572982     61,50000000     85,75000000
TKJEL          13     0,84895147      0,13886376      0,68888889      1,11250000
TEMP           13    21,25489316      1,22759117     18,89333333     23,13333333
PH             13     7,04986813      0,16745589      6,81000000      7,29433333
SECCHI         13    22,56428571      8,74562557      7,28571429     35,80000000
CHLA           13     9,27118590      6,91132108      0,65000000     22,27866667
DO             13     3,63436661      1,39851955      1,13333333      7,03333333
DOSAT          13    41,45252160     16,29739168     13,33951673     82,00063464
TOC            13    12,23219231      2,53028187      8,20000000     16,28666667
DOC            13     9,96198352      2,29976598      6,74000000     14,35333333
POC            13     3,59853846      1,04389644      1,31000000      4,88500000
N_P            13     1,88470396      1,00341939      0,36050955      3,25565722

------------------------------- SEASON= SUMMER -------------------------------

TP             15     0,27522815      0,20363612      0,13100000      0,96500000
OP             15     0,05618481      0,02590479      0,01000000      0,10050000
NH3N           15     0,36893333      0,11373940      0,04250000      0,51000000
NO2NO3N        15     0,18965556      0,05878426      0,02000000      0,28000000
TALK           15   109,30925926     66,87248559     62,50000000    326,00000000
TKJEL          15     1,35055556      0,80017649      0,65000000      3,60000000
TEMP           14    29,21082341      2,83584369     23,37111111     32,60000000
PH             15     7,24674815      0,26423527      6,77500000      7,60000000
SECCHI         11    14,97727273      4,29891638      8,00000000     22,00000000
CHLA           14    13,86633929      8,48125184      2,40000000     24,70000000
DO             15     3,58088889      0,95921634      2,18666667      5,32000000
DOSAT          14    45,10695387     10,57500645     29,46789371     67,28471348
TOC            16    12,66156250      3,27328414      9,46000000     22,96000000
DOC            16     6,36770833      1,30743165      4,47000000      9,60000000
POC            13     6,65884615      3,86593464      2,05000000     18,74000000
N_P            15     2,45962146      1,08096271      0,35714286      4,42748092

------------------------------- SEASON=  FALL --------------------------------

TP             15     0,15916217      0,05245003      0,10408333      0,29300000
OP             15     0,04440198      0,02863522      0,01200000      0,12407143
NH3N           15     0,11962963      0,06031840      0,05000000      0,22416667
NO2NO3N        15     0,15601852      0,09329185      0,03000000      0,34333333
TALK           15   112,08624339     27,96073452     63,00000000    182,41666667
TKJEL          15     0,89908730      0,27714606      0,56666667      1,55000000
TEMP           14    17,53258787      4,54907381     12,28888889     31,10000000
PH             15     7,49397619      0,34052214      6,95000000      8,32500000
SECCHI         14    15,57738095      8,51001874      8,00000000     42,00000000
CHLA           12    13,90375000      8,62240340      2,90000000     26,80000000
DO             15     6,42570767      1,69442677      1,80000000      8,61250000
DOSAT          14    64,43162481     21,33936544     18,29513748     86,69421299
TOC            12     9,67430556      1,99485582      4,69000000     11,99000000
DOC            11     4,61401515      0,81166485      3,30000000      6,23000000
POC            10     5,06900000      0,77041764      3,90000000      6,37000000
N_P            15     1,87839996      0,78274286      0,30716724      2,84403670
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                 SEASON MEANS          MORGANSA FLOODWAY
                              SEASON= WINTER

VARIABLE       N          MEAN         STANDARD          MINIMUM          MAXIMUM
                                       DEVIATION          VALUE            VALUE

TP             1       0,26366667             .        0,26366667       0,26366667
OP             1       0,16633333             .        0,16633333       0,16633333
NH3N           1       0,12333333             .        0,12333333       0,12333333
NO2NO3N        1       0,10666667             .        0,10666667       0,10666667
TALK           1      65,00000000             .       65,00000000      65,00000000
TKJEL          1       1,06666667             .        1,06666667       1,06666667
TEMP           1       9,01333333             .        9,01333333       9,01333333
PH             1       7,16666667             .        7,16666667       7,16666667
SECCHI         1      10,00000000             .       10,00000000      10,00000000
CHLA           1       0,98400000             .        0,98400000       0,98400000
DO             1       7,13333333             .        7,13333333       7,13333333
DOSAT          1      63,76677574             .       63,76677574      63,76677574
TOC            0        .                     .         .                .
DOC            0        .                     .         .                .
POC            0        .                     .         .                .
N_P            1       0,87231353             .        0,87231353       0,87231353

---------------------------- SEASON= SPRING ----------------------------

TP             1       0,30188333             .        0,30188333       0,30188333
OP             1       0,10413333             .        0,10413333       0,10413333
NH3N           1       0,12400000             .        0,12400000       0,12400000
NO2NO3N        1       0,24033333             .        0,24033333       0,24033333
TALK           1     128,15000000             .      128,15000000     128,15000000
TKJEL          1       1,17000000             .        1,17000000       1,17000000
TEMP           1      21,28166667             .       21,28166667      21,28166667
PH             1       6,59000000             .        6,59000000       6,59000000
SECCHI         1       7,40000000             .        7,40000000       7,40000000
CHLA           1       7,87566667             .        7,87566667       7,87566667
DO             1       6,41333333             .        6,41333333       6,41333333
DOSAT          1      73,38395237             .       73,38395237      73,38395237
TOC            1      23,33000000             .       23,33000000      23,33000000
DOC            1       8,34000000             .        8,34000000       8,34000000
POC            1      14,99000000             .       14,99000000      14,99000000
N_P            1       1,19076840             .        1,19076840       1,19076840

---------------------------- SEASON= SUMMER ----------------------------

TP             1       0,37200000             .        0,37200000       0,37200000
OP             1       0,15350000             .        0,15350000       0,15350000
NH3N           1       0,20000000             .        0,20000000       0,20000000
NO2NO3N        1       0,07000000             .        0,07000000       0,07000000
TALK           1     199,00000000             .      199,00000000     199,00000000
TKJEL          1       1,15000000             .        1,15000000       1,15000000
TEMP           1      31,35000000             .       31,35000000      31,35000000
PH             1       7,80000000             .        7,80000000       7,80000000
SECCHI         1       7,00000000             .        7,00000000       7,00000000
CHLA           1      10,20000000             .       10,20000000      10,20000000
DO             1       2,54000000             .        2,54000000       2,54000000
DOSAT          1      34,42093998             .       34,42093998      34,42093998
TOC            1      13,07000000             .       13,07000000      13,07000000
DOC            1       7,40000000             .        7,40000000       7,40000000
POC            1       5,67000000             .        5,67000000       5,67000000
N_P            1       0,72580645             .        0,72580645       0,72580645

---------------------------- SEASON=  FALL ----------------------------

TP             1       0,47116667             .        0,47116667       0,47116667
OP             1       0,19675000             .        0,19675000       0,19675000
NH3N           1       0,14444444             .        0,14444444       0,14444444
NO2NO3N        1       0,54111111             .        0,54111111       0,54111111
TALK           1      81,50000000             .       81,50000000      81,50000000
TKJEL          1       0,84166667             .        0,84166667       0,84166667
TEMP           1      12,82444444             .       12,82444444      12,82444444
PH             1       6,88666667             .        6,88666667       6,88666667
SECCHI         1       6,50000000             .        6,50000000       6,50000000
CHLA           1       8,18000000             .        8,18000000       8,18000000
DO             1       7,67777778             .        7,67777778       7,67777778
DOSAT          1      73,62949777             .       73,62949777      73,62949777
TOC            1      11,84000000             .       11,84000000      11,84000000
DOC            1       7,44000000             .        7,44000000       7,44000000
POC            1       4,40000000             .        4,40000000       4,40000000
N_P            1       1,07289501             .        1,07289501       1,07289501
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        SEASON MEANS         ATCHAF BASIN FLDWY LESS FORDOUCHE
                             SEASON= WINTER

VARIABLE      N          MEAN        STANDARD        MINIMUM        MAXIMUM
                                     DEVIATION         VALUE          VALUE

TP           36    0.17800939      0.14760153     0.04900000     0.85966667
OP           36    0.05593358      0.08648190     0.01500000     0.51900000
NH3N         36    0.09040234      0.04594296     0.04000000     0.26333333
NO2NO3N      36    0.33382226      0.22047751     0.02000000     0.78000000
TALK         36   77.33232476     14.15961299    37.62500000   115.75000000
TKJEL        36    0.59392857      0.15155388     0.33333333     0.95000000
TEMP         55   10.51743098      2.60190223     6.24500000    21.60000000
PH           55    7.26786911      0.25506929     6.80000000     7.96750000
SECCHI       53   27.64454927     32.59430843     4.00000000   163.00000000
CHLA         54    3.47344342      4.07199865     0.13100000    15.70000000
DO           53    7.19197215      2.04307580     2.63333333    10.50000000
DOSAT        53   66.05325832     16.89252756    25.33862542    94.74916498
TOC          13   10.28885897      3.81345435     5.10000000    18.90000000
DOC          13    7.19992308      2.97026617     3.90000000    12.60000000
POC          12    3.67023611      2.14502025     0.30000000     6.50000000
N_P          36    3.57791021      2.75954232     0.45592705    14.89795918

------------------------------ SEASON= SPRING ------------------------------

TP           56    0.21949831      0.08347729     0.06800000     0.44781667
OP           56    0.07129315      0.04282511     0.02783333     0.26183333
NH3N         57    0.05691082      0.04535817     0.02000000     0.25750000
NO2NO3N      57    0.40339766      0.32235421     0.02000000     1.28000000
TALK         57   79.80165692     19.32155675    40.66666667   130.13333333
TKJEL        56    0.67418651      0.13014265     0.40000000     1.27666667
TEMP         57   21.17990553      1.57267741    16.80000000    25.01000000
PH           57    7.18871324      0.21445621     6.82000000     7.75000000
SECCHI       58   18.91902709     11.26141474     4.50000000    44.00000000
CHLA         56    5.02907262      3.16465409     1.08400000    19.50000000
DO           56    4.66427296      1.79551409     1.80000000     8.10000000
DOSAT        56   52.74455459     19.61305906    19.88566294    89.27000827
TOC          57    8.97081248      2.70143759     5.21000000    20.42333333
DOC          57    5.94610819      1.53947422     1.58000000     9.15000000
POC          57    3.95247368      2.11159198     0.70000000    11.68333333
N_P          56    2.97313964      1.91497404     0.12718601     8.08171439

------------------------------ SEASON= SUMMER ------------------------------

TP           55    0.17006414      0.15588266     0.00600000     1.01000000
OP           53    0.03582443      0.02868171     0.00750000     0.12700000
NH3N         55    0.30896061      0.10482479     0.04000000     0.61000000
NO2NO3N      55    0.29416162      0.24521486     0.02500000     0.83000000
TALK         55  103.72020202     32.53663997    63.00000000   282.50000000
TKJEL        55    0.94090909      0.39522378     0.45000000     2.60000000
TEMP         53   30.37789308      3.27426830    16.56666667    33.90000000
PH           54    7.54115741      0.68449515     4.10000000     8.90000000
SECCHI       50   17.68333333      8.34461074     1.30000000    36.00000000
CHLA         49   16.38455782     19.03456304     0.60000000   100.50000000
DO           52    5.57336538      2.23866376     1.85000000    11.20000000
DOSAT        51   74.75663161     31.26849567    24.53276958   156.86300778
TOC          54    9.94197531      2.11034288     5.08000000    18.18000000
DOC          43    4.43488496      1.09983920     2.95500000     9.40000000
POC          33    5.40393939      1.57446804     1.60000000     9.16000000
N_P          55    5.59096282      6.43065437     0.47524752    48.33333333

------------------------------ SEASON=  FALL -------------------------------

TP           54    0.12337608      0.06578264     0.04400000     0.44200000
OP           54    0.03056193      0.01431484     0.01050000     0.08187500
NH3N         55    0.06148939      0.04383336     0.02000000     0.23000000
NO2NO3N      55    0.30888434      0.23045419     0.02000000     0.77000000
TALK         55  108.71989899     23.67654163    76.00000000   199.75000000
TKJEL        54    0.89567387      0.22483864     0.24000000     1.12500000
TEMP         54   15.04696091      2.80943802    10.66000000    27.60000000
PH           55    7.44584798      0.32999673     7.01000000     8.30000000
SECCHI       54   17.67654321     14.49584142     6.00000000    96.00000000
CHLA         52    9.47558333      6.97413939     1.38500000    36.90000000
DO           51    7.73677560      1.83332710     3.05000000    11.20000000
DOSAT        50   76.34647913     18.25070782    23.06197622   102.91389405
TOC          46    7.31974638      2.62995129     1.67000000    12.44000000
DOC          48    4.04555556      1.38866607     2.14000000     9.87000000
POC          34    4.04389706      1.83780163     0.07000000     8.23000000
N_P          54    3.30902226      2.20270439     0.28838779     8.72717451
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                 SEASON MEANS          UPPER FLATS
                          SEASON= WINTER

VARIABLE      N        MEAN        STANDARD        MINIMUM         MAXIMUM
                                   DEVIATION        VALUE           VALUE

TP            5     0,08373333    0.00991113     0,07200000      0,09750000
OP            5     0,03373333    0.00508893     0,02800000      0,03916667
NH3N          5     0,07533333    0.02701337     0,05500000      0,12000000
NO2NO3N       5     0,23866667    0.15487629     0,12000000      0,43666667
TALK          5    70,80000000    2.76234602    67,66666667     73,50000000
TKJEL         5     0,67000000    0.15429049     0,41666667      0,80000000
TEMP          5    11,70700000    1.75963790    10,26333333     14,77166667
PH            5     7,04666667    0.03613247     7,00000000      7,10000000
SECCHI        5    30,10000000    3.97492130    24,00000000     35,00000000
CHLA          5     0,74510000    0.53108973     0,29400000      1,63050000
DO            5     5,42333333    0.49519917     5,00000000      6,26666667
DOSAT         5    51,40369999    3.95399628    46,87559847     57,69951492
TOC           0         .             .              .               .
DOC           0         .             .              .               .
POC           0         .             .              .               .
N_P           5     3,97082849    2.69250257     1,94871795      7,73148148

----------------------------- SEASON= SPRING -----------------------------

TP            5     0,13402000    0.03378608     0,10600000      0,17566667
OP            5     0,08044333    0.02612408     0,05063333      0,10966667
NH3N          5     0,06836667    0.02515519     0,05166667      0,11250000
NO2NO3N       5     0,20260000    0.07315258     0,16333333      0,33300000
TALK          5    86,13333333    6.34363198    77,00000000     92,00000000
TKJEL         5     0,68200000    0.07769599     0,57666667      0,76666667
TEMP          5    20,89305556    0.69494982    19,86666667     21,55000000
PH            5     7,08650000    0.09297252     6,98416667      7,18333333
SECCHI        5    38,60000000    4.50555213    31,00000000     42,00000000
CHLA          5     2,24865000    1.30244181     1,08400000      3,80000000
DO            5     3,67000000    0.93694613     2,88333333      5,17500000
DOSAT         5    41,47916252   11.33759445    31,93639395     59,45566013
TOC           5     8,45283333    1.32660903     6,50750000      9,82000000
DOC           5     7,24233333    1.19124212     5,45500000      8,30000000
POC           5     2,25933333    0.87964371     1,18000000      3,60500000
N_P           5     2,97793088    0.77687873     2,18331105      4,10084522

----------------------------- SEASON= SUMMER -----------------------------

TP            4     0,08275000    0.00613052     0,07500000      0,08900000
OP            4     0,01800000    0.00632456     0,01200000      0,02600000
NH3N          4     0,30125000    0.04905354     0,24000000      0,35000000
NO2NO3N       4     0,12625000    0.01108678     0,11000000      0,13500000
TALK          4   100,25000000    6.65206735    92,00000000    107,00000000
TKJEL         4     1,06250000    0.20686524     0,80000000      1,40000000
TEMP          4    31,21250000    1.10481899    30,05000000     32,30000000
PH            4     7,81625000    0.75103678     7,16500000      8,90000000
SECCHI        3    18,16666667    3.61708907    14,00000000     20,50000000
CHLA          4    21,11250000   26.24742448     5,20000000     60,00000000
DO            4     6,64375000    2.19870938     3,57500000      8,80000000
DOSAT         4    90,18115738   30.15968585    48,25204004    120,17196302
TOC           4    11,11750000    0.58545566    10,59000000     11,75000000
DOC           4     5,07000000    0.31780497     4,71000000      5,48000000
POC           4     6,04750000    0.35947879     5,59000000      6,39000000
N_P           4     5,16154387    0.54304939     4,66666667      5,67901235

----------------------------- SEASON=  FALL -----------------------------

TP            5     0,14250000    0.03543877     0,10778000      0,19450000
OP            5     0,01920556    0.00736354     0,01050000      0,02977778
NH3N          5     0,03733333    0.01109304     0,02500000      0,05000000
NO2NO3N       5     0,18916667    0.11820856     0,02000000      0,35333333
TALK          5   107,61111111    5.24065894   103,50000000    116,00000000
TKJEL         5     0,60333333    0.23196025     0,45000000      1,00000000
TEMP          5    17,52877778    1.41184746    16,42500000     19,73000000
PH            5     7,45733333    0.11107024     7,35000000      7,62500000
SECCHI        5     8,63333333    2.25585658     7,00000000     11,50000000
CHLA          5    11,73000000   13.00161528     1,50000000     29,80000000
DO            5     6,94666667    1.58838667     4,30000000      8,20000000
DOSAT         5    72,89465203   14.90401083    48,36214314     83,30379178
TOC           2     9,90500000    0.30405592     9,69000000     10,12000000
DOC           2     4,83500000    1.30814758     3,91000000      5,76000000
POC           2     5,07000000    1.00409163     4,36000000      5,78000000
N_P           5     1,66954701    0.75413346     0,33888600      2,15779093
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                    SEASON MEANS          BUFFALO COVE
                               SEASON= WINTER
VARIABLE        N         MEAN         STANDARD        MINIMUM        MAXIMUM
                                       DEVIATION        VALUE          VALUE
TP             15      0.22335216     0.19586507     0.06766667     0.65966667
OP             15      0.08192578     0.12865233     0.01933333     0.51900000
NH3N           15      0.10460450     0.06219256     0.04000000     0.26333333
NO2NO3N        15      0.30136786     0.19330194     0.05000000     0.70500000
TALK           15     78.87813492    11.12286785    64.32083333   109.00000000
TKJEL          15      0.59126190     0.15742179     0.33333333     0.95000000
TEMP           15     11.41280247     2.39241203     7.13500000    15.49083333
PH             15      7.13423302     0.21414751     6.80000000     7.60000000
SECCHI         15     32.44407407    40.89508302     4.00000000   150.33333333
CHLA           14      7.44015079     4.98654607     0.13100000    15.70000000
DO             14      6.31387472     2.53435212     2.63333333    10.00000000
DOSAT          14     59.73102044    21.68505241    25.33862542    85.34628530
TOC             8     10.59054167     2.64108716     7.15000000    15.20000000
DOC             8      7.18893750     2.85225195     3.90000000    12.60000000
POC             7      4.31135714     1.90991044     1.20000000     6.20000000
N_P            15      3.56957091     7.14070092     1.08604957     9.27366221
----------------------------- SEASON= SPRING ------------------------------
TP             16      0.22423542     0.08134939     0.09450000     0.35300000
OP             16      0.10180417     0.05823986     0.03700000     0.26183333
NH3N           16      0.06973090     0.05179138     0.02750000     0.23966667
NO2NO3N        16      0.37749479     0.14699841     0.06000000     0.60500000
TALK           16     90.42500000    17.48781116    71.83333333   130.13333333
TKJEL          16      0.72501736     0.17827940     0.55000000     1.27666667
TEMP           16     21.18871280     1.37768094    16.80000000    23.06250000
PH             16      7.04503596     0.14431901     6.82000000     7.29444444
SECCHI         16     20.35066964    10.39868451     6.00000000    44.00000000
CHLA           15      5.85626667     2.38093340     2.50000000    10.75125000
DO             15      3.85509259     1.85638390     1.80000000     8.10000000
DOSAT          15     43.75536545    20.19411035    19.88566294    85.05536664
TOC            16     10.07381101     3.40342818     6.66750000    20.42333333
DOC            16      6.56338542     1.51686349     2.75000000     9.15000000
POC            16      4.30380208     2.65103334     0.70000000    11.68333333
N_P            16      3.25860136     1.51403540     0.48313370     5.59138715
----------------------------- SEASON= SUMMER ------------------------------
TP             16      0.21914062     0.23182569     0.05900000     1.01000000
OP             16      0.01395312     0.00585678     0.00750000     0.02700000
NH3N           16      0.28682292     0.05012597     0.21000000     0.39000000
NO2NO3N        16      0.18010417     0.13787604     0.08500000     0.57000000
TALK           16    111.32291667    54.42444538    63.00000000   282.50000000
TKJEL          16      1.03750000     0.44365903     0.50000000     2.10000000
TEMP           16     28.61687500     3.87063905    17.86000000    32.80000000
PH             16      7.01625000     0.91570303     4.10000000     8.00000000
SECCHI         14     20.61904762    11.89610806     1.30000000    36.00000000
CHLA           15     17.04222222    23.73616314     0.60000000   100.50000000
DO             14      4.56357143     2.30348434     1.85000000     9.20000000
DOSAT          14     58.82251909    30.88804341    24.53276958   126.99033944
TOC            15     10.93088889     3.05113893     5.08000000    18.18000000
DOC            12      4.20125000     0.67327262     2.95500000     5.89000000
POC            11      6.43363636     1.12162625     5.00000000     9.16000000
N_P            16      3.65539768     2.80811630     0.47524752    11.03246299
----------------------------- SEASON=  FALL -------------------------------
TP             16      0.12441927     0.04918211     0.04400000     0.20900000
OP             16      0.02918229     0.01759681     0.01500000     0.08187500
NH3N           16      0.06285590     0.04370360     0.02000000     0.19500000
NO2NO3N        16      0.16592882     0.16243344     0.02000000     0.50750000
TALK           16    122.71701389    29.43960341    89.50000000   199.75000000
TKJEL          16      0.62039931     0.24084298     0.32500000     1.12500000
TEMP           16     16.75529861     3.80775419    12.11666667    27.60000000
PH             16      7.39646701     0.28395616     7.10000000     8.05625000
SECCHI         16     16.17291667    11.60797439     7.50000000    54.00000000
CHLA           14     10.48333333     5.88284849     3.10000000    25.40000000
DO             12      7.78148148     2.12892317     3.05000000    11.20000000
DOSAT          12     75.60078033    24.25266280    23.06197622   101.30149096
TOC            13      9.39730769     1.59342479     7.42000000    12.44000000
DOC            13      4.61224359     0.73573529     2.97000000     5.56500000
POC            10      4.77325000     1.58247172     2.76000000     7.29000000
N_P            16      1.92678249     1.33334354     0.28838779     4.82268590
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              SEASON MEANS          UPPER BELLE RIVER
                              SEASON= WINTER

VARIABLE       N        MEAN        STANDARD        MINIMUM         MAXIMUM
                                    DEVIATION        VALUE           VALUE

TP             5     0.10141111    0.02010044     0.07994444      0.12477778
OP             5     0.03825556    0.00513849     0.03150000      0.04358333
NH3N           5     0.07077778    0.00681094     0.05944444      0.07666667
NO2NO3N        5     0.26794444    0.11868518     0.09000000      0.40500000
TALK           5    83.46666667    2.15840662    80.05555556     85.25000000
TKJEL          5     0.48833333    0.06702450     0.37500000      0.55000000
TEMP          19    10.32868421    1.31586647     8.40000000     12.62888889
PH            19     7.24316520    0.18358198     7.00916667      7.70000000
SECCHI        19    23.13596491   16.77909327     8.00000000     69.50000000
CHLA          19     1.38561404    1.29570220     0.42000000      5.82666667
DO            19     7.67314327    1.36909754     5.07500000      9.80000000
DOSAT         19    70.39404645   12.34607358    44.51381575     89.84644131
TOC            0      .              .              .               .
DOC            0      .              .              .               .
POC            0      .              .              .               .
N_P            5     4.01029759    1.26684198     1.74811631      4.69393300

---------------------------- SEASON= SPRING ----------------------------

TP            19     0.21295760    0.07301449     0.12208333      0.38430000
OP            19     0.05929094    0.02489020     0.02783333      0.12250000
NH3N          19     0.04289474    0.02688110     0.02000000      0.09250000
NO2NO3N       19     0.25705409    0.24090310     0.02000000      0.82666667
TALK          19    71.30847953    8.87358296    52.33333333     86.00000000
TKJEL         19     0.61922515    0.12889696     0.40000000      0.85000000
TEMP          19    22.12641458    1.22800691    19.25000000     24.25000000
PH            19     7.12315915    0.15805506     6.93666667      7.44700000
SECCHI        19    19.23558897    8.59031050     7.50000000     42.60000000
CHLA          19     5.73197281    2.72659128     2.36133333     13.00000000
DO            19     4.22477235    1.47046492     2.07500000      7.00000000
DOSAT         19    48.41498076   16.16152988    24.97748688     77.14737862
TOC           19     7.73894737    2.16670087     5.29000000     13.97333333
DOC           19     5.68798246    1.21131300     2.65000000      7.64333333
POC           19     3.19833333    1.29327224     1.75500000      7.03333333
N_P           19     2.37891553    2.16475472     0.12718601      6.26748252

---------------------------- SEASON= SUMMER ----------------------------

TP            19     0.13573684    0.09099288     0.06100000      0.46000000
OP            18     0.04840741    0.02966045     0.01800000      0.12400000
NH3N          19     0.35054386    0.14784502     0.06000000      0.61000000
NO2NO3N       19     0.24929825    0.17399208     0.02500000      0.55000000
TALK          19    93.01754386    5.30196060    81.00000000    100.00000000
TKJEL         19     0.82719298    0.19101827     0.55000000      1.30000000
TEMP          18    30.38842593    3.52493816    16.56666667     33.00000000
PH            18     7.52800926    0.21912056     7.14750000      7.85000000
SECCHI        18    18.55555556    5.97270480    11.00000000     30.00000000
CHLA          16    12.69562500    8.51129208     1.80000000     31.00000000
DO            18     4.94092593    2.15237004     2.84000000     10.80000000
DOSAT         18    65.56914327   28.09954806    38.13335405    146.08670278
TOC           19     9.77736842    0.88657169     8.53000000     12.03000000
DOC           12     4.62916667    1.56305330     3.42000000      9.40000000
POC            6     4.53333333    1.56054691     1.60000000      6.00000000
N_P           19     8.10848372    2.35181791     1.32352941     10.75471698

---------------------------- SEASON=  FALL -----------------------------

TP            19     0.11077924    0.09448459     0.04800000      0.44200000
OP            19     0.02660819    0.00814801     0.01300000      0.04700000
NH3N          19     0.06609649    0.03903747     0.03500000      0.21000000
NO2NO3N       19     0.27725146    0.14981166     0.06666667      0.55500000
TALK          19   102.34941520    8.58869701    88.00000000    121.25000000
TKJEL         19     0.52953216    0.15005775     0.40000000      1.05000000
TEMP          19    14.45385965    0.96973994    12.15000000     16.05833333
PH            19     7.22713450    0.19679690     7.01000000      7.60000000
SECCHI        19    21.36842105    9.51421596    10.00000000     41.33333333
CHLA          19     8.63578947    3.89440242     3.30000000     17.05000000
DO            19     6.95321637    1.17817853     5.13333333      9.80000000
DOSAT         19    69.54679216   11.20300353    51.38903371     94.30843657
TOC           18     5.88194444    1.76876422     3.13000000      9.44000000
DOC           18     4.26083333    1.72883355     2.96000000      9.87000000
POC           12     2.66583333    1.43217862     0.07000000      4.85000000
N_P           19     3.76725928    2.04792923     1.18565317      8.45238095
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                      SEASON MEANS          GRAND LAKE
                               SEASON= WINTER

VARIABLE        N          MEAN          STANDARD          MINIMUM          MAXIMUM
                                         DEVIATION          VALUE            VALUE

TP              2      0,06500000       0,02262742       0,04900000       0,08100000
OP              2      0,02250000       0,00636396       0,01800000       0,02700000
NH3N            2      0,04250000       0,00353553       0,04000000       0,04500000
NO2NO3N         2      0,44125000       0,35178562       0,19250000       0,69000000
TALK            2     85,50000000      10,60660172      78,00000000      93,00000000
TKJEL           2      0,43750000       0,05303301       0,40000000       0,47500000
TEMP            2      8,93416667       2.45248202       7,20000000      10,66833333
PH              2      7,83375000       0,18915106       7,70000000       7,96750000
SECCHI          1     16,00000000        .              16,00000000      16,00000000
CHLA            2      2,19500000       0,19091883       2,06000000       2,33000000
DO              2      9,50000000       0,98994949       8,80000000      10,20000000
DOSAT           2     84,98820655      13,80407979      75,22724812      94,74916498
TOC             0       .                .                .                .
DOC             0       .                .                .                .
POC             0       .                .                .                .
N_P             2      9,24938282       7,98829330       3,60080645      14,89795918

------------------------------ SEASON= SPRING ------------------------------

TP              2      0,18186111       0,08646345       0,12072222       0,24300000
OP              2      0,04505556       0,01917045       0,03150000       0,05861111
NH3N            2      0,08555556       0,03614101       0,06000000       0,11111111
NO2NO3N         2      0,63833333       0,07306770       0,58666667       0,69000000
TALK            2     62,30555556       7,34605378      57,11111111      67,50000000
TKJEL           2      0,61111111       0,05499719       0,57222222       0,65000000
TEMP            2     19,58916667       1.41774910      18,58666667      20,59166667
PH              2      7,41895833       0,11461022       7,33791667       7,50000000
SECCHI          2      8,75000000       4,59619408       5,50000000      12,00000000
CHLA            2      3,82750000       0,03889087       3,80000000       3,85500000
DO              2      7,01500000       0,94045202       6,35000000       7,68000000
DOSAT           2     77,32244089       8,62639491      71,22265855      83,42222322
TOC             2      9,05083333       2,15785419       7,52500000      10,57666667
DOC             2      4,27000000       0,78724555       3,71333333       4,82666667
POC             2      4,94916667       2,70704046       3,03500000       6,86333333
N_P             2      5,07151125       1,71936857       3,85573407       6,28728842

------------------------------ SEASON= SUMMER ------------------------------

TP              2      0,15366667       0,01932759       0,14000000       0,16733333
OP              2      0,03783333       0,00400694       0,03500000       0,04066667
NH3N            2      0,23000000       0,02828427       0,21000000       0,25000000
NO2NO3N         2      0,44666667       0,49026070       0,10000000       0,79333333
TALK            2    102,66666667       5.18544973      99,00000000     106,33333333
TKJEL           2      0,63333333       0,09428090       0,56666667       0,70000000
TEMP            2     32,35000000       0,77781746      31,80000000      32,90000000
PH              2      7,96666667       0,04714045       7,93333333       8,00000000
SECCHI          2     12,00000000       0,00000000      12,00000000      12,00000000
CHLA            1     24,70000000        .              24,70000000      24,70000000
DO              2      6,34666667       0,49026070       6,00000000       6,69333333
DOSAT           2     87,04331881       5,81683097      82,93019819      91,15643943
TOC             2      8,74000000       0,14142136       8,64000000       8,84000000
DOC             1      3,16000000        .               3,16000000       3,16000000
POC             1      5,68000000        .               5,68000000       5,68000000
N_P             2      4,24800797       2,47205658       2,50000000       5,99601594

------------------------------ SEASON=  FALL ------------------------------

TP              2      0,16625000       0,03335187       0,14266667       0,18983333
OP              2      0,03825000       0,00883883       0,03200000       0,04450000
NH3N            2      0,04250000       0,00353553       0,04000000       0,04500000
NO2NO3N         2      0,42416667       0,40894342       0,13500000       0,71333333
TALK            2     99,66666667      12,49221980      90,83333333     108,50000000
TKJEL           2      0,37500000       0,05892557       0,33333333       0,41666667
TEMP            2     13,41333333       3,27154737      11,10000000      15,72666667
PH              2      7,80500000       0,02828427       7,78500000       7,82500000
SECCHI          2     11,91666667       4,83189634       8,50000000      15,33333333
CHLA            2     10,62500000       5,12652416       7,00000000      14,25000000
DO              2      9,41666667       1,06066017       8,66666667      10,16666667
DOSAT           2     92,49493726       4,24617273      89,49243973      95,49743479
TOC             2      6,47500000       1,16672619       5,65000000       7,30000000
DOC             2      3,78000000       1,75362482       2,54000000       5,02000000
POC             2      3,49000000       0,53740115       3,11000000       3,87000000
N_P             2      2,79010881       2,25956479       1,19235522       4,38786239
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                        SEASON MEANS          INLET
                                SEASON= WINTER

VARIABLE       N          MEAN       STANDARD          MINIMUM          MAXIMUM
                                     DEVIATION           VALUE            VALUE
TP             1     0,22300000
OP             1     0,03350000              .      0,22300000       0,22300000
NH3N           1     0,09666667              .      0,03350000       0,03350000
NO2NO3N        1     0,59333333              .      0,09666667       0,09666667
TALK           1    78,33333333              .      0,59333333       0,59333333
TKJEL          1     0,63333333              .     78,33333333      78,33333333
TEMP           1    14,14833333              .      0,63333333       0,63333333
PH             1     7,61250000              .     14,14833333      14,14833333
SECCHI         1     7,33333333              .      7,61250000       7,61250000
CHLA           1    12,31750000              .      7,33333333       7,33333333
DO             1     9,37333333              .     12,31750000      12,31750000
DOSAT          1    90,76782860              .      9,37333333       9,37333333
TOC            1     8,05250000              .     90,76782860      90,76782860
DOC            1     3,93750000              .      8,05250000       8,05250000
POC            1     5,65333333              .      3,93750000       3,93750000
N_P            1     3,54489752              .      5,65333333       5,65333333
                                             .      3,54489752       3,54489752
------------------------------ SEASON= SPRING ------------------------------

TP             1     0,27905556
OP             1     0,03855556              .      0,27905556       0,27905556
NH3N           1     0,12000000              .      0,03855556       0,03855556
NO2NO3N        1     1,04055556              .      0,12000000       0,12000000
TALK           1    69,66666667              .      1,04055556       1,04055556
TKJEL          1     0,90555556              .     69,66666667      69,66666667
TEMP           1    18,15333333              .      0,90555556       0,90555556
PH             1     7,55476190              .     18,15333333      18,15333333
SECCHI         1     4,75000000              .      7,55476190       7,55476190
CHLA           1     6,86800000              .      4,75000000       4,75000000
DO             1     7,16190476              .      6,86800000       6,86800000
DOSAT          1    73,86968853              .      7,16190476       7,16190476
TOC            1    10,15166667              .     73,86968853      73,86968853
DOC            1     5,01857143              .     10,15166667      10,15166667
POC            1     4,99666667              .      5,01857143       5,01857143
N_P            1     4,87516393              .      4,99666667       4,99666667
                                             .      4,87516393       4,87516393
------------------------------ SEASON= SUMMER ------------------------------

TP             1     0,15650000
OP             1     0,04750000              .      0,15650000       0,15650000
NH3N           1     0,19750000              .      0,04750000       0,04750000
NO2NO3N        1     0,55500000              .      0,19750000       0,19750000
TALK           1   121,75000000              .      0,55500000       0,55500000
TKJEL          1     1,32500000              .    121,75000000     121,75000000
TEMP           1    31,70000000              .      1,32500000       1,32500000
PH             1     7,90000000              .     31,70000000      31,70000000
SECCHI         1     6,00000000              .      7,90000000       7,90000000
CHLA           1    10,30000000              .      6,00000000       6,00000000
DO             1     7,28000000              .     10,30000000      10,30000000
DOSAT          1    99,01178541              .      7,28000000       7,28000000
TOC            1     8,40666667              .     99,01178541      99,01178541
DOC            1     2,68000000              .      8,40666667       8,40666667
POC            1     5,03000000              .      2,68000000       2,68000000
N_P            1     5,52596944              .      5,03000000       5,03000000
                                             .      5,52596944       5,52596944
------------------------------ SEASON=  FALL ------------------------------

TP             1     0,24466667
OP             1     0,06920000              .      0,24466667       0,24466667
NH3N           1     0,12400000              .      0,06920000       0,06920000
NO2NO3N        1     0,54200000              .      0,12400000       0,12400000
TALK           1   106,60000000              .      0,54200000       0,54200000
TKJEL          1     0,40000000              .    106,60000000     106,60000000
TEMP           1    10,80500000              .      0,40000000       0,40000000
PH             1     7,61250000              .     10,80500000      10,80500000
SECCHI         1     7,00000000              .      7,61250000       7,61250000
CHLA           1     2,71250000              .      7,00000000       7,00000000
DO             1     9,46666667              .      2,71250000       2,71250000
DOSAT          1    87,90093821              .      9,46666667       9,46666667
TOC            1     6,69500000              .     87,90093821      87,90093821
DOC            1     3,82000000              .      6,69500000       6,69500000
POC            1     2,32666667              .      3,82000000       3,82000000
N_P            1     3,26840157              .      2,32666667       2,32666667
                                             .      3,26840157       3,26840157
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                         SEASON MEANS          OUTLET
                               SEASON= WINTER

VARIABLE        N           MEAN        STANDARD          MINIMUM           MAXIMUM
                                        DEVIATION           VALUE             VALUE

TP              1     0,24133333           .           0,24133333        0,24133333
OP              1     0,04811111           .           0,04811111        0,04811111
NH3N            1     0,13444444           .           0,13444444        0,13444444
NO2NO3N         1     0,52111111           .           0,52111111        0,52111111
TALK            1    63,00000000           .          63,00000000       63,00000000
TKJEL           1     0,75000000           .           0,75000000        0,75000000
TEMP            3     7,36277778      0,99653474       6,24500000        8,15833333
PH              3     7,58750000      0,09437293       7,50000000        7,68750000
SECCHI          3    34,69444444     47,16845796       5,00000000       89,08333333
CHLA            3     7,44722222      5,02004547       1,70000000       10,97500000
DO              3     9,77277778      0,74120835       9,01833333       10,50000000
DOSAT           3    83,54035821      4,06658340      79,13449077       87,14983011
TOC             2     5,99875000      1,27102444       5,10000000        6,89750000
DOC             2     4,66875000      0,18561553       4,53750000        4,80000000
POC             2     1,79000000      2,10717821       0,30000000        3,28000000
N_P             1     3,15939348           .           3,15939348        3,15939348

------------------------------ SEASON= SPRING ------------------------------

TP              3     0,29492593      0,06917007       0,25111111        0,37466667
OP              3     0,04796296      0,01827578       0,03600000        0,06900000
NH3N            3     0,03296296      0,01540937       0,02000000        0,05000000
NO2NO3N         3     0,78333333      0,08685876       0,68333333        0,84000000
TALK            3    63,88888889     10,64755232      56,00000000       76,00000000
TKJEL           3     0,66481481      0,10279029       0,60000000        0,78333333
TEMP            3    19,76333333      0,69604438      19,34000000       20,56666667
PH              3     7,49185185      0,06263054       7,42600000        7,55066667
SECCHI          3     6,75000000      2,53722289       4,50000000        9,50000000
CHLA            3     3,49072222      1,73627448       1,63300000        5,07250000
DO              3     6,93259259      1,09364569       5,67333333        7,64444444
DOSAT           3    76,14640672     15,93758349      57,88844393       87,27330298
TOC             3     8,21694444      2,18988843       5,90333333       10,25750000
DOC             3     5,47044444      0,65475401       4,71666667        5,89800000
POC             3     4,36750000      2,50424515       1,51000000        6,18000000
N_P             3     3,06469491      0,37544448       2,63366809        3,32046332

------------------------------ SEASON= SUMMER ------------------------------

TP              3     0,13737037      0,01851937       0,11611111        0,15000000
OP              3     0,03709259      0,00644405       0,03277778        0,04450000
NH3N            3     0,33444444      0,05640462       0,28666667        0,39666667
NO2NO3N         3     0,74296296      0,09879105       0,62888889        0,80000000
TALK            3    97,25925926      2,08561603      96,00000000       99,66666667
TKJEL           3     0,95555556      0,05091751       0,90000000        1,00000000
TEMP            3    31,72222222      1,00572436      30,56666667       32,40000000
PH              3     7,97222222      0,15485955       7,86666667        8,15000000
SECCHI          3    12,33333333      4,16333200       9,00000000       17,00000000
CHLA            3     7,16666667      2,88848288       5,40000000       10,50000000
DO              3     6,44444 44      0,21430335       6,20000000        6,60000000
DOSAT           3    87,65596472      2,85725808      84,89529444       90,60089196
TOC             3     9,02444444      0,87959797       8,50333333       10,04000000
DOC             3     3,76777778      0,76490619       3,15000000        4,62333333
POC             2     5,48000000      0,14142136       5,38000000        5,58000000
N_P             3     7,89694233      0,40733649       7,46666667        8,27661028

------------------------------ SEASON=  FALL ------------------------------

TP              2     0,10897222      0,01418142       0,09894444        0,11900000
OP              2     0,05166667      0,00659966       0,04700000        0,05633333
NH3N            3     0,05314815      0,04900974       0,02000000        0,10944444
NO2NO3N         3     0,66888889      0,07373627       0,60000000        0,74666667
TALK            3    84,64814815     10,93842662      76,00000000       96,94444444
TKJEL           2     0,68333333      0,02357023       0,66666667        0,70000000
TEMP            3    13,29796296      0,82189564      12,39388889       14,00000000
PH              3     7,86907407      0,14881874       7,70722222        8,00000000
SECCHI          3    13,20000000      1,31148770      12,00000000       14,60000000
CHLA            3     5,99400000      4,16959327       2,70000000       10,68200000
DO              3     9,40370370      0,60003429       8,80000000       10,00000000
DOSAT           3    92,57853142      5,79938537      88,21892267       99,16040683
TOC             3     8,65583333      3,72451367       4,44000000       11,50000000
DOC             3     2,90083333      0,65899703       2,14000000        3,29250000
POC             2     7,44500000      1,11015765       6,66000000        8,23000000
N_P             2     7,22073011      2,13043410       5,71428571        8,72717451
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        SEASON MEANS          OUTSIDE LEVEED ATCHAFALAYA SYSTEM
                              SEASON= WINTER

VARIABLE      N        MEAN        STANDARD         MINIMUM         MAXIMUM
                                   DEVIATION          VALUE           VALUE

TP            6     0,17302318     0,04977580     0,09141667      0,24097222
OP            6     0,05881250     0,01917836     0,03083333      0,09000000
NH3N          6     0,08254630     0,03974705     0,03500000      0,14250000
NO2NO3N       6     0,13844907     0,16089321     0,02750000      0,45500000
TALK          6    68,65046296    33,41683571    26,00000000    100,29166667
TKJEL         6     0,68564815     0,08412892     0,53333333      0,76666667
TEMP         37    12,04761562     2,64053835     7,08000000     18,12833333
PH           37     7,78118919     0,49997877     6,95000000      8,80000000
SECCHI       36    13,71488095    17,20072466     2,00000000    103,28571429
CHLA         37     8,12500901     7,39995611     0,58900000     28,66000000
DO           37     8,56177778     2,01130389     2,00000000     11,60000000
DOSAT        37    81,52870265    19,16301053    18,86844943    112,98749132
TOC           5    10,27216667     2,78104307     6,51000000     14,00000000
DOC           5     6,87926667     2,65525301     2,76500000     10,13333333
POC           5     4,08306667     2,17301354     0,75000000      6,30000000
N_P           6     1,29423886     1,21236596     0,67030735      3,73639942

----------------------------- SEASON= SPRING -----------------------------

TP           37     0,21625685     0,08474617     0,09175000      0,43266667
OP           37     0,05021253     0,03753082     0,01175000      0,15700000
NH3N         38     0,06912110     0,04503433     0,02000000      0,22583333
NO2NO3N      38     0,37467105     0,32081665     0,02000000      1,08750000
TALK         38    81,43439327    20,63629815    27,16666667    133,00000000
TKJEL        37     1,02805931     0,55693149     0,60000000      3,75000000
TEMP         38    23,67177924     1,53329378    19,40000000     26,02000000
PH           38     7,71087082     0,32133126     7,09791667      8,26000000
SECCHI       37    11,02387387     4,15098631     5,75000000     19,66666667
CHLA         38    14,43414223     9,67631162     0,50000000     33,17775000
DO           38     6,43230263     1,47979483     1,80000000      8,75000000
DOSAT        38    76,75701006    18,19517890    21,68305569    103,17041004
TOC          38    11,86446784     4,33319641     6,47000000     30,73000000
DOC          38     7,67249311     1,91875891     4,73666667     11,75250000
POC          38     5,12509064     3,72395353     1,60000000     23,64000000
N_P          37     2,35159336     1,75078068     0,29850746      6,24944772

----------------------------- SEASON= SUMMER -----------------------------

TP           37     0,22091817     0,18575513     0,08600000      1,26000000
OP           37     0,06242117     0,03696943     0,00900000      0,16600000
NH3N         37     0,35039039     0,11438361     0,04666667      0,73000000
NO2NO3N      37     0,26889640     0,20866456     0,09500000      0,97000000
TALK         37    91,91486486    35,24676738    56,66666667    272,26666667
TKJEL        37     1,64864865     3,38968884     0,60000000     21,60000000
TEMP         35    31,15166667     1,08238567    29,25000000     32,85000000
PH           36     8,00327932     0,53195700     7,02500000      9,35000000
SECCHI       33    13,83333333    11,10633578     6,00000000     73,00000000
CHLA         31    23,78806452    24,28868576     0,93000000    131,90000000
DO           36     5,56064815     2,14501661     0,80000000      9,90000000
DOSAT        35    76,85790291    26,82010153    33,12791464    133,99129508
TOC          33    11,56535354     4,47471018     5,73000000     33,44000000
DOC          35     5,72376190     4,59632934     2,83000000     30,50000000
POC          24     5,98916667     1,66440462     2,90000000      8,74000000
N_P          37     3,68562338     2,75840032     0,71428571     14,03846154

----------------------------- SEASON=  FALL -----------------------------

TP           31     0,17379973     0,07859366     0,06500000      0,41600000
OP           28     0,05153968     0,02705569     0,01200000      0,12900000
NH3N         30     0,09831944     0,13919115     0,02000000      0,65194444
NO2NO3N      30     0,19959259     0,21615381     0,02000000      0,68250000
TALK         30   107,80509259    26,07656588    66,00000000    170,00000000
TKJEL        31     1,13707437     0,44966840     0,58750000      2,70000000
TEMP         37    15,53214339     2,05777265     9,50000000     23,15000000
PH           37     7,80624550     0,41124788     6,86916667      8,70000000
SECCHI       37    12,07342342     2,90564175     6,75000000     18,00000000
CHLA         37    15,65754505     8,78688946     2,90000000     38,73333333
DO           37     8,35992042     1,87745905     0,83333333     11,60000000
DOSAT        37    86,06933711    18,99373603     9,00011432    124,06160185
TOC          34     9,76507353     2,35415254     5,58000000     16,48000000
DOC          34     4,03196078     0,79822791     2,58000000      6,89000000
POC          29     5,71367816     1,93919337     1,79000000      9,59000000
N_P          29     1,92025961     1,93888522     0,12820513      7,67645644
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                SEASON MEANS          COURTABLEAU
                              SEASON= WINTER

VARIABLE        N         MEAN       STANDARD        MINIMUM         MAXIMUM
                                     DEVIATION        VALUE           VALUE

TP              2     0,20981944    0,04405668     0,17866667      0,24097222
OP              2     0,07529167    0,02080072     0,06058333      0,09000000
NH3N            2     0,09083333    0,00589256     0,08666667      0,09500000
NO2NO3N         2     0,06236111    0,02690934     0,04333333      0,08138889
TALK            2    27,22222222    1,72848324    26,00000000     28,44444444
TKJEL           2     0,59722222    0,09035253     0,53333333      0,66111111
TEMP            3    10,17777778    1,44834900     9,32000000     11,85000000
PH              3     7,12592593    0,07563177     7,06666667      7,21111111
SECCHI          3     6,00000000    1,00000000     5,00000000      7,00000000
CHLA            3     1,57888889    0,60186131     0,93666667      2,13000000
DO              3     7,46666667    0,11547005     7,40000000      7,60000000
DOSAT           3    68,93592456    3,90319180    66,64241682     73,44270417
TOC             1    11,08500000        .         11,08500000     11,08500000
DOC             1     6,82500000        .          6,82500000      6,82500000
POC             1     5,73000000        .          5,73000000      5,73000000
N_P             2     0,73715437    0,01349503     0,72761194      0,74669680

------------------------------ SEASON= SPRING ------------------------------

TP              3     0,27666667    0,15170036     0,12966667      0,43266667
OP              3     0,08643056    0,03207241     0,05050000      0,11216667
NH3N            3     0,10013889    0,01089990     0,09000000      0,11166667
NO2NO3N         3     0,18236111    0,05562201     0,11833333      0,21875000
TALK            3    76,48611111   42,73205303    27,16666667    102,45833333
TKJEL           3     0,75555556    0,13574213     0,60000000      0,85000000
TEMP            3    22,78657407    1,51783655    21,78888889     24,53333333
PH              3     7,17708333    0,06906494     7,10000000      7,23333333
SECCHI          3     8,58333333    2,12622514     7,00000000     11,00000000
CHLA            3     1,50983333    0,87868657     0,50000000      2,10000000
DO              3     4,30231481    1,17353824     3,00000000      5,27777778
DOSAT           3    50,40817539   12,03438916    37,17377969     60,69478739
TOC             3    12,48555556    1,70209457    11,45000000     14,45000000
DOC             3     8,88777778    0,94390050     7,96333333      9,85000000
POC             3     4,31333333    2,35085800     1,60000000      5,74000000
N_P             3     1,17946417    0,44280276     0,73729618      1,62289899

------------------------------ SEASON= SUMMER ------------------------------

TP              3     0,25977778    0,08121394     0,16666667      0,31600000
OP              3     0,12741667    0,04854000     0,07291667      0,16600000
NH3N            3     0,17055556    0,18510007     0,04666667      0,38333333
NO2NO3N         3     0,26555556    0,09901365     0,18666667      0,37666667
TALK            3   128,97777778  124,09360863    56,66666667    272,26666667
TKJEL           3     0,70000000    0,06666667     0,63333333      0,76666667
TEMP            3    29,69444444    0,39381797    29,25000000     30,00000000
PH              3     7,27611111    0,20552327     7,13333333      7,51166667
SECCHI          3    15,00000000    6,24499800    10,00000000     22,00000000
CHLA            2     1,90000000    0,00000000     1,90000000      1,90000000
DO              3     4,26000000    1,46042612     3,29333333      5,94000000
DOSAT           3    56,48290504   19,27405767    43,80601666     78,66311917
TOC             2    11,33500000    0,21920310    11,18000000     11,49000000
DOC             3     7,00000000    4,37149860     3,90000000     12,00000000
POC             1     6,08000000        .          6,08000000      6,08000000
N_P             3     1,63260754    0,81178182     0,74651688      2,40506329

------------------------------ SEASON= FALL ------------------------------

TP              3     0,18257407    0,02866001     0,15083333      0,20655556
OP              3     0,06670370    0,02079184     0,04866667      0,08944444
NH3N            3     0,18564815    0,06133440     0,12083333      0,24277778
NO2NO3N         3     0,35296296    0,11616338     0,25333333      0,48055556
TALK            3   156,48148148   12,10911468   142,50000000    163,61111111
TKJEL           3     0,80370370    0,16483562     0,61666667      0,92777778
TEMP            3    16,01250000    1,47610011    14,65416667     17,58333333
PH              3     7,37759259    0,27016246     7,06666667      7,55500000
SECCHI          3    15,25000000    3,19178633    11,75000000     18,00000000
CHLA            3     5,16111111    1,66769413     3,33333333      6,60000000
DO              3     6,79074074    0,47500271     6,45000000      7,33333333
DOSAT           3    71,32165634    5,41787961    65,67304440     76,47476176
TOC             3     8,92777778    1,57340866     7,79000000     10,72333333
DOC             3     4,21777778    0,57871825     3,55000000      4,57333333
POC             2     5,43500000    1,01116270     4,72000000      6,15000000
N_P             3     2,89385423    0,58210323     2,34676007      3,50557310
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               SEASON MEANS             FAUSSE POINT BASIN
                                  SEASON= WINTER

VARIABLE        N          MEAN          STANDARD          MINIMUM          MAXIMUM
                                         DEVIATION          VALUE            VALUE
TP              0
OP              0           .                .                .                .
NH3N            0           .                .                .                .
NO2NO3N         0           .                .                .                .
TALK            0           .                .                .                .
TKJEL           0           .                .                .                .
TEMP            5      13,34366667      3,22008272      10,77000000      17,05000000
PH              5       7,56000000      0,30700163       7,20000000       7,80000000
SECCHI          5       5,32000000      1,92665513       2,00000000       7,00000000
CHLA            5       8,67820000     10,51190062       0,58900000      26,43000000
DO              5       8,55333333      0,56647058       8,00000000       9,40000000
DOSAT           5      83,96393807      7,86098292      74,82874620      90,96766104
TOC             0           .                .                .                .
DOC             0           .                .                .                .
POC             0           .                .                .                .
N_P             0           .                .                .                .

---------------------------- SEASON= SPRING ----------------------------

TP              5       0,30170000      0,07443933       0,22350000       0,41850000
OP              5       0,04870000      0,01348167       0,02800000       0,06116667
NH3N            5       0,07500000      0,01724013       0,06000000       0,09666667
NO2NO3N         5       0,27533333      0,10893041       0,16000000       0,40000000
TALK            5      61,76666667      5,44875113      54,50000000      68,50000000
TKJEL           5       1,43333333      0,55677644       0,95000000       2,35000000
TEMP            5      22,69111111      2,66496346      19,40000000      26,02000000
PH              5       7,78331667      0,44580551       7,09791667       8,21600000
SECCHI          5       6,90333333      1,03403202       5,75000000       8,50000000
CHLA            5      11,96934667     10,76098925       0,90000000      25,85500000
DO              5       7,17400000      1,25371537       5,39333333       8,75000000
DOSAT           5      83,81618631     13,59318397      62,44519507      94,34929889
TOC             5      14,81000000      2,99779085      10,75000000      19,00000000
DOC             5       8,28000000      1,77009887       5,65000000      10,00000000
POC             5       7,29000000      1,52823428       5,00000000       9,00000000
N_P             5       1,22082475      0,61190441       0,62598831       1,86530221

---------------------------- SEASON= SUMMER ----------------------------

TP              5       0,23803333      0,01451455       0,21600000       0,25100000
OP              5       0,06736667      0,04182211       0,02500000       0,12450000
NH3N            5       0,37666667      0,04606758       0,30000000       0,42000000
NO2NO3N         5       0,20066667      0,09967726       0,12000000       0,35000000
TALK            5      70,30000000     11,87223652      60,00000000      90,00000000
TKJEL           5       1,17333333      0,39819035       0,76666667       1,80000000
TEMP            5      30,49000000      0,82643814      29,50000000      31,50000000
PH              5       8,09800000      0,70486346       7,02500000       8,70000000
SECCHI          3       9,16666667      2,02072594       8,00000000      11,50000000
CHLA            4      22,10750000     27,17393773       0,93000000      58,40000000
DO              5       6,58800000      3,38914739       2,48000000       9,90000000
DOSAT           5      88,11056144     45,13326848      33,47024550     133,99129508
TOC             5      11,30600000      1,59841484       9,07000000      13,44000000
DOC             5       4,33800000      0,61316393       3,31000000       4,85000000
POC             5       6,96800000      1,68652602       4,22000000       8,74000000
N_P             5       2,42499365      0,50740929       1,94444444       3,12633833

---------------------------- SEASON=  FALL ----------------------------

TP              5       0,18040000      0,10238371       0,06500000       0,31200000
OP              5       0,04150000      0,02092845       0,01700000       0,06200000
NH3N            5       0,02400000      0,00651920       0,02000000       0,03500000
NO2NO3N         5       0,02100000      0,00223607       0,02000000       0,02500000
TALK            5     109,70000000     40,41596219      66,00000000     170,00000000
TKJEL           5       1,08000000      0,38503247       0,75000000       1,50000000
TEMP            5      17,18133333      3,64104026      14,60333333      23,15000000
PH              5       8,07400000      0,33386125       7,57666667       8,50000000
SECCHI          5      11,10000000      0,52174919      10,33333333      11,66666667
CHLA            5      21,72000000      7,39641805      10,00000000      28,00000000
DO              5       8,92000000      1,11494893       7,13333333       9,80000000
DOSAT           5      93,45861713     11,22698865      77,29827019     105,97176137
TOC             4      10,03500000      1,28136646       9,01000000      11,86000000
DOC             4       3,87750000      0,63876835       2,92000000       4,23000000
POC             4       6,31500000      1,55195576       4,83000000       7,68000000
N_P             5       0,34027096      0,20976973       0,12820513       0,61538462
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                    SEASON MEANS          BAYOU TECHE
                              SEASON= WINTER

VARIABLE        N          MEAN          STANDARD          MINIMUM          MAXIMUM
                                         DEVIATION          VALUE            VALUE
TP              0
OP              0           .               .                .                .
NH3N            0           .               .                .                .
NO2NO3N         0           .               .                .                .
TALK            0           .               .                .                .
TKJEL           0           .               .                .                .
TEMP            2     12,29000000     0,35355339      12,04000000      12,54000000
PH              2      7,30000000     0,14142136       7,20000000       7,40000000
SECCHI          2      5,00000000     0,00000000       5,00000000       5,00000000
CHLA            2      1,28000000     0,32526912       1,05000000       1,51000000
DO              2      7,65000000     1,62634560       6,50000000       8,80000000
DOSAT           2     73,77661509    15,10902515      63,09292095      84,46030923
TOC             0           .               .                .                .
DOC             0           .               .                .                .
POC             0           .               .                .                .
N_P             0           .               .                .                .

------------------------------ SEASON= SPRING ------------------------------

TP              3      0,24729167     0,03310172       0,21195833       0,27758333
OP              3      0,07025000     0,02377732       0,04841667       0,09558333
NH3N            3      0,18102778     0,04279200       0,14058333       0,22583333
NO2NO3N         3      0,28708333     0,07807693       0,20500000       0,36041667
TALK            3     69,08333333     0,79494933      68,25000000      69,83333333
TKJEL           3      1,19027778     0,10477600       1,07083333       1,26666667
TEMP            3     24,50722222     0,59702115      23,84666667      25,00833333
PH              3      7,55591667     0,19483599       7,34791667       7,73416667
SECCHI          3      6,38333333     0,12583057       6,25000000       6,50000000
CHLA            3      5,67541667     1,37182179       4,22325000       6,94950000
DO              3      5,72944444     1,12681500       4,54166667       6,78333333
DOSAT           3     69,68527469    13,64827853      55,63880341      82,89704734
TOC             3     11,83333333     1,85831465      10,30000000      13,90000000
DOC             3      8,71666667     1,58140233       6,95000000      10,00000000
POC             3      3,11666667     0,92240627       2,10000000       3,90000000
N_P             3      1,81846662     0,33291713       1,52798115       2,18176315

------------------------------ SEASON= SUMMER ------------------------------

TP              3      0,23858333     0,05884319       0,18875000       0,30350000
OP              3      0,08775000     0,04204982       0,05625000       0,13550000
NH3N            3      0,42833333     0,01527525       0,41500000       0,44500000
NO2NO3N         3      0,24833333     0,10214369       0,17500000       0,36500000
TALK            3     67,83333333     6,04841577      61,00000000      72,50000000
TKJEL           3      0,95833333     0,14215602       0,80000000       1,07500000
TEMP            3     32,32500000     0,46300648      31,97500000      32,85000000
PH              3      7,65833333     0,08036376       7,60000000       7,75000000
SECCHI          3     11,33333333     0,57735027      11,00000000      12,00000000
CHLA            1     19,74000000          .          19,74000000      19,74000000
DO              3      4,60000000     0,15000000       4,45000000       4,75000000
DOSAT           3     63,10704776     1,81450526      61,46791960      65,05682133
TOC             2     11,46000000     1,34350288      10,51000000      12,41000000
DOC             3      4,73000000     1,05702412       3,90000000       5,92000000
POC             2      6,55000000     2.77185858       4.59000000       8.5100000C
N_P             3      2,89119221     0,36283448       2,57001647       3,28476821

------------------------------ SEASON=  FALL ------------------------------

TP              3      0,20816667     0,09333051       0,13000000       0,31150000
OP              3      0,04483333     0,02440458       0,03000000       0,07300000
NH3N            3      0,02833333     0,01443376       0,02000000       0,04500000
NO2NO3N         3      0,25833333     0,20978163       0,02000000       0,41500000
TALK            3     84,77777778     3,53291402      81,00000000      88,00000000
TKJEL           3      0,90000000     0,13228757       0,75000000       1,00000000
TEMP            3     16,78629630     0,89539724      15,97444444      17,74666667
PH              3      7,38796296     0,34240631       6,99500000       7,62222222
SECCHI          3     10,00000000     1,20185043       9,00000000      11,33333333
CHLA            3     13,61666667     5,40655466       7,70000000      18,30000000
DO              3      5,61296296     4,15116499       0,83333333       8,31666667
DOSAT           3     58,90359103    43,27865708       9,00011432      86,15193953
TOC             3      8,31333333     2,87423613       5,65000000      11,36000000
DOC             3      3,73000000     0,48815981       3,19000000       4,14000000
POC             3      4,58333333     2,71838800       1,79000000       7,22000000
N_P             3      1,84067823     1,57256576       0,20866774       3,34615385
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                    SEASON MEANS             SOUTH OF MORGAN CITY
                                      SEASON= WINTER

VARIABLE        N           MEAN          STANDARD          MINIMUM          MAXIMUM
                                          DEVIATION           VALUE            VALUE
TP              1     0,16433333
OP              1     0,06366667           .             0,16433333       0,16433333
NH3N            1     0,14250000           .             0,06366667       0,06366667
NO2NO3N         1     0,45500000           .             0,14250000       0,14250000
TALK            1    72,25000000           .             0,45500000       0,45500000
TKJEL           1     0,75000000           .            72,25000000      72,25000000
TEMP           13    10,72320513           .             0,75000000       0,75000000
PH             13     7,89692308      2,20640274         7,08000000      15,45000000
SECCHI         12     9,56944444      0,20734698         7,62000000       8,22750000
CHLA           13     5,88788462      3,55864173         5,33333333      16,00000000
DO             13     9,51602564      4,73229946         1,10000000      16,59000000
DOSAT          13    88,26437771      1,00331892         8,00000000      10,76666667
TOC             1     6,51000000     11,30776744        68,36593229     103,85203707
DOC             1     2,76500000           .             6,51000000       6,51000000
POC             1     3,74500000           .             2,76500000       2,76500000
N_P             1     3,73639942           .             3,74500000       3,74500000
                                           .             3,73639942       3,73639942
------------------------------ SEASON= SPRING ------------------------------

TP             13     0,18593910      0,05719580
OP             13     0,02973718      0,01006615         0,09175000       0,27775000
NH3N           13     0,05358974      0,02982275         0,01175000       0,04191667
NO2NO3N        13     0,70173077      0,33554276         0,03000000       0,13000000
TALK           13    73,13461538      4,83327807         0,13500000       1,08750000
TKJEL          13     1,07211538      0,82357724        64,25000000      82,50000000
TEMP           13    23,33196581      1,65631342         0,60000000       3,75000000
PH             13     7,67027411      0,18124360        20,08333333      25,30000000
SECCHI         12     9,93055556      3,44549797         7,32400000       8,03666667
CHLA           13    14,19268626      9,29446760         6,33333333      19,66666667
DO             13     6,78508547      0,95512923         2,87500000      30,10000000
DOSAT          13    80,79761628     13,77214978         5,06666667       8,43333333
TOC            13    11,27989744      6,24403290        53,65872109     103,17041004
DOC            13     6,21702564      1,54050070         6,88000000      30,73000000
POC            13     5,72646154      5,66196172         4,73666667       9,29333333
N_P            13     4,24056194      1,86590014         1,96000000      23,64000000
                                                         1,24355670       6,24944772
------------------------------ SEASON= SUMMER ------------------------------

TP             13     0,23528205      0,30948992
OP             13     0,04007692      0,02919329         0,10400000       1,26000000
NH3N           13     0,40782051      0,10957279         0,00900000       0,11600000
NO2NO3N        13     0,34615385      0,28269240         0,30000000       0,73000000
TALK           13    92,93589744      9,91760931         0,10500000       0,97000000
TKJEL          13     2,74743590      5,68021194        84,00000000     123,00000000
TEMP           12    32,10555556      0,49253689         0,80000000      21,60000000
PH             13     7,91987179      0,20145703        31,33333333      32,80000000
SECCHI         12    10,25000000      2,26133508         7,60000000       8,32500000
CHLA           13    27,52307692     32,80902198         6,00000000      13,00000000
DO             13     4,81025641      1,66195916         5,10000000     131,90000000
DOSAT          12    65,85380907     17,39867449         0,80000000       6,80000000
TOC            11    11,80272727      7,45131813        33,12791464      92,60913169
DOC            13     6,62230769      7,22594418         5,73000000      33,44000000
POC             9     5,05555556      1,68428851         2,83000000      30,50000000
N_P            13     5,08209482      3,54162859         2,90000000       7,67000000
                                                         0,71428571      14,03846154
------------------------------ SEASON=  FALL -------------------------------

TP             10     0,17738750      0,05880148
OP             10     0,05774167      0,02287003         0,10500000       0,24500000
NH3N           11     0,08223485      0,08840302         0,02700000       0,10600000
NO2NO3N        11     0,31310606      0,26334760         0,02000000       0,33000000
TALK           11    94,55303030     12,79606454         0,02000000       0,68250000
TKJEL          10     1,26875000      0,34722917        70,00000000     109,00000000
TEMP           13    14,44164530      1,72668956         0,58750000       1,63333333
PH             13     7,62782906      0,30209607         9,50000000      16,01125000
SECCHI         13    10,29871795      2,41471628         6,86916667       7,96500000
CHLA           13    12,84942308     10,02163607         6,75000000      14,80000000
DO             13     8,60376923      1,51316077         2,90000000      38,73333333
DOSAT          13    87,14170923     14,46145023         4,11666667       9,90000000
TOC            12    10,60305556      2,89886340        43,79056938     102,83273431
DOC            12     4,18354167      1,13005654         5,64000000      16,48000000
POC             9     6,35000000      2,32367166         3,87000000       6,89000000
N_P            10     2,75582003      2,57425006         2,47000000       9,59000000
                                                         0,26455026       7,67645644
                    SEASON MEANS          INDUSTRIAL
                              SEASON= WINTER

VARIABLE      N        MEAN          STANDARD         MINIMUM          MAXIMUM
                                     DEVIATION         VALUE            VALUE

TP            0         .               .                .                .
OP            0         .               .                .                .
NH3N          0         .               .                .                .
NO2NO3N       0         .               .                .                .
TALK          0         .               .                .                .
TKJEL         0         .               .                .                .
TEMP          4    10,13958333      1,48631746       8,96833333      12,29166667
PH            4     8,02437500      0,26043622       7,65000000       8,22750000
SECCHI        4    11,00000000      4,16333200       6,00000000      16,00000000
CHLA          4     8,45500000      2.39751955       5.91000000      11,61000000
DO            4     9,82500000      1,25826895       8,00000000      10,76666667
DOSAT         4    91,97376153      9,75515078      77,97675608     100,39915368
TOC           0         .               .                .                .
DOC           0         .               .                .                .
POC           0         .               .                .                .
N_P           0         .               .                .                .

----------------------------- SEASON= SPRING -----------------------------

TP            4     0,20539583      0,06087295       0,12883333       0,26000000
OP            4     0,03479167      0,00345105       0,03150000       0,03825000
NH3N          4     0,06458333      0,02803354       0,04333333       0,10500000
NO2NO3N       4     0,83812500      0.24613153       0,53000000       1,07916667
TALK          4    75,25000000      4,97074776      71,25000000      82,50000000
TKJEL         4     0,74791667      0,12367352       0,60000000       0,90000000
TEMP          4    23,98847222      1,05685741      22,45333333      24,85833333
PH            4     7,61599504      0,19937042       7,32400000       7,75625000
SECCHI        4     9,74166667      1,59869739       8,00000000      11,80000000
CHLA          4    16,43590952      8,07809423       5,97540000      23,29900000
DO            4     6,70708333      1,29723950       5,28666667       8,43333333
DOSAT         4    81,04325606     17,30766870      60,86521183     103,17041004
TOC           4     8,95500000      1,33626760       7,67666667      10,83666667
DOC           4     5,23833333      0,58912050       4,79333333       6,10000000
POC           4     4,57916667      1.55560486       2,73000000       6,00000000
N_P           4     4,81413937      1,21438726       3,28928823       6,24944772

----------------------------- SEASON= SUMMER -----------------------------

TP            4     0,15891667      0,00991585       0,14900000       0,17066667
OP            4     0,04600000      0,02367527       0,01900000       0,07633333
NH3N          4     0,36916667      0,02671870       0,34333333       0,40666667
NO2NO3N       4     0,3575.000      0.13428480       0.17000000       0,47000000
TALK          4    89,91666667      4.76386864      84,00000000      95,66666667
TKJEL         4     0,96666667      0,12472191       0,80000000       1,10000000
TEMP          4    21,99166667      0,56919371      31,33333333      32.50000000
PH            4     8,07708333      0,22020350       7,80000000       8,32500000
SECCHI        4     9,75000000      2,62995564       6,00000000      12,00000000
CHLA          4    18,35000000     14,21841529       5,10000000      37,90000000
DO            4     4,03333333      0,51496134       3,46666667       4,53333333
DOSAT         4    55,04341788      6,63754846      47,61575843      61.34994199
TOC           4     9,11000000      0,53372902       8,52000000       9,77000000
DOC           4     4,61750000      0,79922358       3,78000000       5,61000000
POC           3     4,60333333      0,77293812       4,02000000       5,48000000
N_P           4     4,59738889      1,01957741       3,14285714       5,45081528

----------------------------- SEASON=  FALL -------------------------------

TP            4     0,22062800      0,02883040       0,17966667       0,24433333
OP            4     0,07304167      0,02735987       0,04400000       0,10600000
NH3N          4     0,14833333      0,12262176       0,06333333       0,33000000
NO2NO3N       4     0,34166667      0,08048464       0,25666667       0,42000000
TALK          4    93,58333333     16,47978560      70,00000000     108,33333333
TKJEL         4     1,53750000      0,13792865       1,35000000       1,63333333
TEMP          4    14,97555556      0,11278394      14,85222222      15,12583333
PH            4     7,58173611      0,48957813       6,86916667       7,96500000
SECCHI        4    10,20833333      1,55232800       8,33333333      12,00000000
CHLA          4     8,69166667      5,92861079       3,03333333      17,00000000
DO            4     7,40833333      2,27215430       4,11666667       9,03333333
DOSAT         4    76,12916822     22,25440179      43,79056938      92,32126996
TOC           4    12,03500000      2,97270360      10,22000000      16,48000000
DOC           4     4,35500000      1,69857784       3,37000000       6,89000000
POC           4     7,68000000      1,28905650       6,85000000       9,59000000
N_P           4     2,25934714      0,66174122       1,35306554       2,79279279
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                    SEASON MEANS          PENCHANT
                          SEASON= WINTER

VARIABLE       N        MEAN         STANDARD        MINIMUM         MAXIMUM
                                     DEVIATION         VALUE           VALUE

TP             0          .              .               .               .
OP             0          .              .               .               .
NH3N           0          .              .               .               .
NO2NO3N        0          .              .               .               .
TALK           0          .              .               .               .
TKJEL          0          .              .               .               .
TEMP           7    11.90678571     1.91597369      9.13500000     15.45000000
PH             7     7.89857143     0.13601361      7.70000000      8.11000000
SECCHI         6     9.75000000     3.29772649      5.50000000     15.00000000
CHLA           7     5.24571429     5.74963436      1.31000000     16.59000000
DO             7     9.53928571     0.87866579      8.20000000     10.50000000
DOSAT          7    88.93108221    11.95116166     68.36593229    103.85203707
TOC            0          .              .               .               .
DOC            0          .              .               .               .
POC            0          .              .               .               .
N_P            0          .              .               .               .

------------------------------ SEASON= SPRING ------------------------------

TP             7     0.15603571     0.04155680      0.09175000      0.21300000
OP             7     0.02425000     0.01066732      0.01175000      0.04050000
NH3N           7     0.05071429     0.03531744      0.03000000      0.13000000
NO2NO3N        7     0.54892857     0.35672952      0.13500000      1.05250000
TALK           7    73.78571429     3.85796949     69.75000000     79.50000000
TKJEL          7     1.33571429     1.07991677      0.77500000      3.75000000
TEMP           7    23.84738095     1.04348147     22.52333333     25.30000000
PH             7     7.75958333     0.14165216      7.61875000      8.03666667
SECCHI         6    11.10277778     4.34524538      8.00000000     19.66666667
CHLA           7    16.12185000     9.50506553      7.27920000     30.10000000
DO             7     6.96761905     0.89819359      5.06666667      7.70666667
DOSAT          7    83.34103016    13.60229734     53.65872109     92.70673090
TOC            7    13.17666667     8.22976846      6.88000000     30.73000000
DOC            7     6.80428571     1.83044188      4.73666667      9.29333333
POC            7     7.11190476     7.59011220      1.96000000     23.64000000
N_P            7     3.90712261     1.90752904      1.24355670      5.84456424

------------------------------ SEASON= SUMMER ------------------------------

TP             7     0.31542857     0.41795957      0.11300000      1.26000000
OP             7     0.03714286     0.03727232      0.00900000      0.11600000
NH3N           7     0.43357143     0.13719558      0.34000000      0.73000000
NO2NO3N        7     0.17428571     0.06247857      0.10500000      0.30000000
TALK           7    94.21428571    13.25976729     84.50000000    123.00000000
TKJEL          7     4.32142857     7.63237933      1.10000000     21.60000000
TEMP           6    32.31666667     0.45350487     31.70000000     32.80000000
PH             7     7.82857143     0.17465953      7.60000000      8.10000000
SECCHI         6    10.16666667     2.48327740      6.00000000     13.00000000
CHLA           7    37.68571429    42.14630979     13.00000000    131.90000000
DO             7     4.15714286     1.86891871      0.80000000      6.00000000
DOSAT          6    64.63690577    16.96842928     33.12791464     81.71393973
TOC            5    15.98600000     9.80305718     10.82000000     33.44000000
DOC            7     8.72714286     9.61460818      4.22000000     30.50000000
POC            5     5.75800000     1.85557809      2.94000000      7.67000000
N_P            7     3.28694241     1.46619986      0.71428571      5.28138528

------------------------------ SEASON=  FALL ------------------------------

TP             4     0.17000000     0.05957069      0.11200000      0.24500000
OP             4     0.04387500     0.01295103      0.02700000      0.05550000
NH3N           5     0.03100000     0.01431782      0.02000000      0.05800000
NO2NO3N        5     0.14500000     0.25773048      0.02000000      0.60500000
TALK           5    92.30000000    12.28617109     78.00000000    109.00000000
TKJEL          4     1.28750000     0.14361407      1.10000000      1.40000000
TEMP           7    14.47369048     2.25303207      9.50000000     16.01125000
PH             7     7.57630952     0.18053410      7.35000000      7.82500000
SECCHI         7     9.39285714     2.30424040      6.75000000     13.75000000
CHLA           7    16.70476190    11.74310560      5.40000000     38.73333333
DO             7     8.95833333     0.67659277      8.02500000      9.90000000
DOSAT          7    90.97250572     6.02392139     82.04301360    102.83273431
TOC            6    11.25666667     1.30899453      9.17000000     13.18000000
DOC            6     4.39666667     0.78357301      2.87000000      4.93000000
POC            3     7.03666667     1.09910570      6.30000000      8.30000000
N_P            4     0.99680312     1.14471991      0.26455026      2.69387755
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                  SEASON MEANS        VERRET BASIN
                          SEASON= WINTER

VARIABLE     N          MEAN        STANDARD         MINIMUM         MAXIMUM
                                   DEVIATION           VALUE           VALUE

TP           3    0.15138889      0.05594456      0.09141667      0.20216667
OP           3    0.04620833      0.01347393      0.03083333      0.05595833
NH3N         3    0.05703704      0.03301858      0.03500000      0.09500000
NO2NO3N      3    0.08365741      0.06292607      0.02750000      0.15166667
TALK         3   95.06944444      4.52737302     92.25000000    100.29166667
TKJEL        3    0.72314815      0.04016587      0.68750000      0.76666667
TEMP        14   13.18060317      2.58686312     11.00833333     18.12833333
PH          14    7.96187302      0.64735518      6.95000000      8.80000000
SECCHI      14   23.16445578     24.89973192     10.00000000    103.28571429
CHLA        14   12.38536905      7.42555868      3.80000000     28.66000000
DO          14    8.04362698      2.89216624      2.00000000     11.60000000
DOSAT       14   78.21031382     27.47039572     18.86844943    112.98749132
TOC          3   11.25527778      2.57125298      8.90250000     14.00000000
DOC          3    8.26877778      1.65516096      6.97300000     10.13333333
POC          3    3.64677778      2.78300488      0.75000000      6.30000000
N_P          3    0.85157500      0.29688858      0.67030735      1.19419961

------------------------------ SEASON= SPRING ------------------------------

TP          13    0.19260924      0.08131791      0.11800000      0.37400000
OP          13    0.05828757      0.05332941      0.01700000      0.15700000
NH3N        14    0.05081680      0.02885349      0.02000000      0.12000000
NO2NO3N     14    0.16642857      0.12717485      0.02000000      0.45000000
TALK        14   99.87251984     16.60415485     81.00000000    133.00000000
TKJEL       13    0.85357906      0.12386309      0.70000000      1.10000000
TEMP        14   24.34822222      0.49435864     23.60000000     25.10416667
PH          14    7.87028175      0.30577947      7.25000000      8.26000000
SECCHI      14   14.95000000      2.46287826     10.00000000     19.60000000
CHLA        14   20.18500000      7.51302443      7.08250000     33.17775000
DO          14    6.44686508      1.73271709      1.80000000      8.20000000
DOSAT       14   77.64543491     21.24355781     21.68305569     98.54837175
TOC         14   11.22888889      3.08335225      6.47000000     19.15666667
DOC         14    8.32286224      1.86915346      6.22666667     11.75250000
POC         14    4.39781746      2.08843990      2.38500000      8.55000000
N_P         13    1.29105638      0.73238148      0.29850746      2.52688172

------------------------------ SEASON= SUMMER ------------------------------

TP          13    0.18692735      0.06270203      0.08600000      0.35113889
OP          13    0.06201923      0.01448531      0.04150000      0.08858333
NH3N        13    0.30636752      0.07227593      0.21000000      0.43000000
NO2NO3N     13    0.22339744      0.18238976      0.09500000      0.62000000
TALK        13   96.21153846     17.45953043     70.00000000    126.66666667
TKJEL       13    1.11089744      0.29787800      0.60000000      1.50000000
TEMP        12   30.54444444      0.71734562     29.40000000     31.60000000
PH          12    8.32219907      0.60553455      7.61000000      9.35000000
SECCHI      12   18.91666667     17.19356528     10.66666667     73.00000000
CHLA        11   24.33272727     11.81219632      5.40000000     39.25000000
DO          12    6.83583333      1.66950964      3.73333333      9.60000000
DOSAT       12   91.70485227     22.73421107     49.33923560    129.32118419
TOC         13   11.51589744      2.45503836      8.92000000     18.65000000
DOC         11    5.21469697      1.37714294      3.65000000      8.81500000
POC          7    6.31714286      1.14998137      5.11000000      8.06000000
N_P         13    3.43111268      2.45134904      0.93747938      8.83720930

------------------------------ SEASON=  FALL -------------------------------

TP          10    0.15396944      0.09726458      0.07800000      0.41600000
OP           7    0.04622619      0.03945071      0.01200000      0.12900000
NH3N         8    0.16038194      0.23194774      0.02000000      0.65194444
NO2NO3N      8    0.07559028      0.07677538      0.02000000      0.19500000
TALK         8  115.22395833      4.49144566    110.83333333    122.00000000
TKJEL       10    1.20506944      0.62899120      0.60000000      2.70000000
TEMP        13   15.58806624      1.38930095     13.59500000     17.95833333
PH          13    8.07712607      0.33723753      7.53000000      8.70000000
SECCHI      13   13.96794872      2.40503358     10.16666667     18.00000000
CHLA        13   19.02717949      6.54841879      8.70000000     29.25000000
DO          13    8.89668803      1.39700494      6.63333333     11.60000000
DOSAT       13   91.82726349     14.67278266     70.06655567    124.06160185
TOC         12    9.40937500      2.03130336      5.58000000     12.71000000
DOC         12    3.96090278      0.58774280      2.58000000      4.80000000
POC         11    5.33333333      1.68523061      2.94000000      8.18000000
N_P          8    1.52804702      1.52420890      0.16826923      4.38836337
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                         SEASON MEANS              PAT BAY
                                SEASON= WINTER

VARIABLE         N          MEAN          STANDARD          MINIMUM           MAXIMUM
                                          DEVIATION           VALUE             VALUE

TP               3    0.15138889        0.05594456        0.09141667        0.20216667
OP               3    0.04620833        0.01347393        0.03083333        0.05595833
NH3N             3    0.05703704        0.03301858        0.03500000        0.09500000
NO2NO3N          3    0.08365741        0.06292607        0.02750000        0.15166667
TALK             3   95.06944444        4.52737302       92.25000000      100.29166667
TKJEL            3    0.72314815        0.04016587        0.68750000        0.76666667
TEMP             5   14.32441111        2.82381910       11.13000000       17.78333333
PH               5    7.33324444        0.23563046        6.95000000        7.56666667
SECCHI           5   42.16047619       36.08003935       13.00000000      103.28571429
CHLA             5    5.77603333        1.78606985        3.80000000        7.90150000
DO               5    8.25882222        2.13708006        2.00000000        7.53966667
DOSAT            5   51.60704206       19.90708563       18.86844943       71.22116102
TOC              3   11.25527778        2.57125298        8.90250000       14.00000000
DOC              3    8.26877778        1.65516096        6.97300000       10.13333333
POC              3    3.64677778        2.78300458        0.75000000        6.30000000
N_P              3    0.85157500        0.29688858        0.67030735        1.19419961

------------------------------ SEASON= SPRING ------------------------------

TP               4    0.23631337        0.07897624        0.16250000        0.32933333
OP               4    0.09835127        0.05581246        0.04583333        0.14973843
NH3N             5    0.05928704        0.01402692        0.04643519        0.08166667
NO2NO3N          5    0.14566667        0.11910313        0.02000000        0.34000000
TALK             5  113.67638889       21.44890322       83.16666667      133.00000000
TKJEL            4    0.86579861        0.13360478        0.70000000        1.01666667
TEMP             5   24.43138889        0.57072823       23.60000000       25.10416667
PH               5    7.61945556        0.21192029        7.25000000        7.76750000
SECCHI           5   15.26000000        2.73459321       13.00000000       19.60000000
CHLA             5   12.52500000        4.21302820        7.08250000       18.06333333
DO               5    4.85455556        1.75366602        1.80000000        6.25000000
DOSAT            5   57.19636:09       20.04461255       21.68305569       69.61287604
TOC              5   13.73222222        3.25316122       10.91250000       19.15666667
DOC              5    9.40001429        1.84814168        7.15000000       11.75250000
POC              5    5.48055556        2.16945647        2.90000000        8.05000000
N_P              4    1.13944350        0.52265852        0.67975217        1.81139385

------------------------------ SEASON= SUMMER ------------------------------

TP               4    0.22476389        0.08436264        0.17775000        0.35113889
OP               4    0.07343750        0.01223220        0.05950000        0.08858333
NH3N             4    0.23652778        0.03020378        0.21000000        0.27916667
NO2NO3N          4    0.10145833        0.01127056        0.09500000        0.11833333
TALK             4  117.89583333        6.05620855      112.75000000      126.66666667
TKJEL            4    1.09791667        0.21509849        0.87500000        1.39166667
TEMP             4   30.51666667        1.05991303       29.40000000       31.60000000
PH               4    7.81847222        0.19834675        7.61000000        8.00000000
SECCHI           4   13.00000000        2.07275090       10.66666667       15.33333333
CHLA             4   19.84000000        5.20128830       15.45000000       25.80000000
DO               4    5.60000000        1.92945546        3.73333333        7.60000000
DOSAT            4   75.27486353       26.81355236       49.33923560      103.22351211
TOC              4   11.73416667        0.59626849       11.33000090       12.61000000
DOC              4    6.39541667        1.63655316        5.20000000        8.81500000
POC              4    6.63500000        1.15627275        5.57000000        8.06000000
N_P              4    1.65479309        0.53570318        0.93747928        2.22322061

------------------------------ SEASON=  FALL -------------------------------

TP               4    0.11417361        0.04150496        0.07800000        0.17047222
OP               4    0.03464583        0.01606070        0.02100000        0.05658333
NH3N             4    0.26826389        0.30725406        0.02000000        0.65194444
NO2NO3N          4    0.12993056        0.07663659        0.03000000        0.19500000
TALK             4  111.94791667        1.45510555      110.83333333      114.00000000
TKJEL            4    0.71267361        0.13035640        0.60000000        0.90000000
TEMP             4   15.83951389        1.61234494       14.37972222       17.95833333
PH               4    7.72055556        0.14325364        7.53000000        7.84333333
SECCHI           4   11.62500000        1.30791749       10.16666667       13.33333333
CHLA             4   18.16750000        9.05390662        8.70000000       29.25000000
DO               4    7.46006944        0.87372436        6.63333333        8.38472222
DOSAT            4   76.71152533        6.56398870       70.06655567       83.22511374
TOC              4    8.15312500        1.03014436        6.95000000        9.01500000
DOC              4    4.09270833        0.48813296        3.70083333        4.80000000
POC              4    4.17666667        1.03552456        2.94000000        5.30666667
N_P              4    2.58616362        1.54336227        0.64102564        4.38836337
```

APPENDIX D. PARAMETER MEANS BY WATER LEVEL FOR SELECTED AREAS OF THE ATCHAFALAYA BASIN

This appendix was generated by computer. Because of this it was necessary to print alphabetic characters in upper case without subscripts and parameter values are given to eight decimal places. Water level means (high and low) are presented by time periods for selected areas of the Atchafalaya Basin, with the number of stations sampled (N), standard deviations of the means, and minimum and maximum station means. The Atchafalaya Basin Floodway exclusive of Fordouche, Fordouche, Buffalo Cove, Upper Flats, and Upper Belle River were selected because they are subjected to wide fluctuations in water stage heights.

High water is defined as when the Atchafalaya River at Simmesport has a discharge rate equal or above 4,799 cms (169,500 cfs). The selected discharge rate is the 9-year (1963-1971) average discharge of the Atchafalaya River at Simmesport. Time periods are abbreviated and defined as follows: PER I = period I (1974), PER II = period II (1975), and PER III = January 1976 to July 1977. The data are organized by high and low water periods I, II and III for selected geographical areas. This is followed by a summary of all high and low water levels for the given area.

Values for TP, OP, NH_3N, NO_2NO_3N, TALK, TKJEL, DO, TOC, DOC and POC are given in mg/l; TEMP is given in degrees Celsius; PH in standard units; SECCHI in inches; CHLA in µg/l; DOSAT in percent, while N-P is a unitless ratio.

```
                    HI & LO H2O MEANS                    FORDOUCHE
                           PERIOD=1   WATER=HIGH
VARIABLE      N          MEAN          STANDARD         MINIMUM          MAXIMUM
                                       DEVIATION          VALUE            VALUE

TP           10      0.18963086      0.07609806      0.12066667      0.33425000
OP           10      0.06138889      0.04414968      0.01500000      0.15041667
NH3N         10      0.07552778      0.03557302      0.04000000      0.14000000
NO2NO3N      10      0.21870833      0.18412858      0.02000000      0.51000000
TALK         10     87.60555556      9.98974783     66.55555556     99.00000000
TKJEL        10      0.67527778      0.20005336      0.40000000      1.05000000
TEMP         10     18.53563889      2.24370997     14.18333333     21.31000000
PH           10      7.26897222      0.37064601      6.67333333      7.85000000
SECCHI       10     16.77500000     12.24883781      3.00000000     42.00000000
CHLA         10      9.90083333      8.20496166      2.90000000     24.02500000
DO           10      4.85583333      2.16735762      1.00000000      7.20000000
DOSAT        10     53.05117339     24.59092546     10.48533122     83.44588883
TOC           0               .               .               .               .
DOC           0               .               .               .               .
POC           0               .               .               .               .
N_P          10      1.58192272      1.09089538      0.52486188      3.42175066
------------------------------ PERIOD=1   WATER=LOW ------------------------------
TP            0               .               .               .               .
OP            0               .               .               .               .
NH3N          0               .               .               .               .
NO2NO3N       0               .               .               .               .
TALK          0               .               .               .               .
TKJEL         0               .               .               .               .
TEMP          3     29.61111111      0.96455709     28.50000000     30.23333333
PH            3      7.24000000      0.37802116      6.81000000      7.52000000
SECCHI        3     19.00000000      4.58257569     15.00000000     24.00000000
CHLA          3     22.96666667      5.15978036     18.00000000     28.30000000
DO            3      2.91111111      1.50012345      1.20000000      4.00000000
DOSAT         3     38.63998346     20.18306918     15.60322735     53.21404184
TOC           0               .               .               .               .
DOC           0               .               .               .               .
POC           0               .               .               .               .
N_P           0               .               .               .               .
------------------------------ PERIOD=2   WATER=HIGH -----------------------------
TP           12      0.20052662      0.06658321      0.10572222      0.34277778
OP           12      0.09603819      0.03306738      0.04250000      0.13044444
NH3N         12      0.08875000      0.03381605      0.05277778      0.16333333
NO2NO3N      12      0.11796296      0.08316231      0.03500000      0.30111111
TALK         12     73.83101852      9.89838388     53.00000000     87.77777778
TKJEL        12      0.83391204      0.19595683      0.61111111      1.20000000
TEMP         12     15.91597963      1.77436304     11.42000000     18.06500000
PH           12      7.08576389      0.13955915      6.77500000      7.27500000
SECCHI       12     22.79861111     10.63314206      6.00000000     36.00000000
CHLA         12      6.98833333      6.74580531      0.36100000     22.40866667
DO           12      5.12106481      0.93536070      4.01388889      7.35000000
DOSAT        12     50.44450346     11.69436150     22.68252432     69.07389867
TOC           0               .               .               .               .
DOC           0               .               .               .               .
POC           0               .               .               .               .
N_P          12      1.37707079      0.67018067      0.44160205      2.83820771
------------------------------ PERIOD=3   WATER=HIGH -----------------------------
TP           13      0.22804829      0.07686002      0.14475000      0.40983333
OP           13      0.08974637      0.02749112      0.04850000      0.14450000
NH3N         13      0.12139316      0.08067748      0.04750000      0.29116667
NO2NO3N      13      0.29329915      0.11597583      0.11000000      0.42833333
TALK         13     68.28034188      4.71405427     59.33333333     78.75000000
TKJEL        13      0.78717949      0.09183163      0.60833333      0.95000000
TEMP         13     17.59679487      0.67761539     16.28888889     18.95000000
PH           13      7.16736111      0.14388851      6.94166667      7.39750000
SECCHI       13     19.48798077     13.26730603      9.00000000     60.59375000
CHLA         13      4.45754986      4.84767953      0.40000000     15.90000000
DO           13      4.63760684      1.62073777      1.30000000      7.95000000
DOSAT        13     50.25158127     17.90228907     13.94314043     88.26638565
TOC          14     12.82940816      4.45065640      8.45000000     25.30000000
DOC          15      9.99524444      3.68257570      5.51500000     20.30000000
POC          14      3.98672619      1.47653283      1.31000000      6.31000000
N_P          13      2.62528260      1.49407045      0.69420173      5.03667697
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                HI & LO H2O MEANS                        FORDOUCHE
                          PERIOD=3   WATER=LOW

VARIABLE        N          MEAN          STANDARD         MINIMUM          MAXIMUM
                                         DEVIATION         VALUE            VALUE

TP             16     0.24210243       0.11658929       0.10900000       0.63500000
OP             16     0.06651337       0.02649711       0.03300000       0.13976667
NH3N           16     0.22641682       0.07786672       0.12428571       0.43500000
NO2NO3N        16     0.14298998       0.05271565       0.08666667       0.25833333
TALK           16    93.32638889      26.62579433      55.58333333     135.83333333
TKJEL          16     1.14541667       0.38707516       0.75000000       2.25000000
TEMP           16    24.07292092       5.41964720      14.15000000      31.75000000
PH             16     7.24907916       0.26802172       6.65000000       7.63000000
SECCHI         16    18.75999504       8.65879738      10.11111111      42.00000000
CHLA           15    13.84341799       7.94444594       3.40000000      27.01250000
DO             16     4.36867187       1.63641583       1.80000000       6.70666667
DOSAT          16    48.78523617      14.52411884      24.28109623      69.46913262
TOC            16    12.28937500       2.07132738       9.59000000      17.69800000
DOC            16     7.69363095       1.59494678       5.38000000      10.68666667
POC            15     6.27002778       3.64257649       2.49000000      16.74000000
N_P            16     1.82750240       0.76268405       0.53011127       3.54748603
```

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           HIGH AND LOW WATER MEANS                         FORDOUCHE
                               WATER=HIGH

VARIABLE        N          MEAN          STANDARD         MINIMUM          MAXIMUM
                                         DEVIATION         VALUE            VALUE

TP             35     0.20763579       0.07297047       0.10572222       0.40983333
OP             35     0.08037286       0.03588016       0.01500000       0.15041667
NH3N           35     0.09709683       0.05821771       0.04000000       0.29116667
NO2NO3N        35     0.21187222       0.14703937       0.02000000       0.51000000
TALK           35    75.70492063      11.39864197      53.00000000      99.00000000
TKJEL          35     0.77123016       0.17373936       0.40000000       1.20000000
TEMP           35    17.28872222       1.91624828      11.42000000      21.31000000
PH             35     7.16841667       0.23528480       6.67333333       7.85000000
SECCHI         35    19.84791667      12.01329596       3.00000000      60.59375000
CHLA           35     6.88047090       6.76526577       0.36100000      24.02500000
DO             35     4.85571429       1.58004273       1.00000000       7.95000000
DOSAT          35    51.11760949      17.85994417      10.48533122      88.26638565
TOC            14    12.82940816       4.45065640       8.45000000      25.30000000
DOC            15     9.99524444       3.68257570       5.51500000      20.30000000
POC            14     3.98672619       1.47653283       1.31000000       6.31000000
N_P            35     1.89959287       1.25543597       0.44160205       5.03667697

------------------------------- WATER=LOW ----------------------------------

TP             16     0.24210243       0.11658929       0.10900000       0.63500000
OP             16     0.06651337       0.02649711       0.03300000       0.13976667
NH3N           16     0.22641682       0.07786672       0.12428571       0.43500000
NO2NO3N        16     0.14298998       0.05271565       0.08666667       0.25833333
TALK           16    93.32638889      26.62579433      55.58333333     135.83333333
TKJEL          16     1.14541667       0.38707516       0.75000000       2.25000000
TEMP           19    24.94737200       5.37450463      14.15000000      31.75000000
PH             19     7.24764561       0.27523151       6.65000000       7.63000000
SECCHI         19    18.79789056       8.05111139      10.11111111      42.00000000
CHLA           18    15.36395944       8.20663265       3.40000000      28.30000000
DO             19     4.13853070       1.66726170       1.20000000       6.70666667
DOSAT          19    47.18335417      15.34598563      15.60322735      69.46913262
TOC            16    12.28937500       2.07132738       9.59000000      17.69800000
DOC            16     7.69363095       1.59494678       5.38000000      10.68666667
POC            15     6.27002778       3.64257649       2.49000000      16.74000000
N_P            16     1.82750240       0.76268405       0.53011127       3.54748603
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     HI & LO H2O MEANS            ATCHAFALAYA B FLOODWAY - FORDOUCHE

                              PERIOD=1   WATER=HIGH

VARIABLE        N          MEAN          STANDARD         MINIMUM          MAXIMUM
                                         DEVIATION          VALUE            VALUE

TP             25     0.11636333       0.05328371      0.05400000       0.28650000
OP             25     0.02693444       0.00832885      0.00400000       0.04150000
NH3N           25     0.06320000       0.03322476      0.02000000       0.16333333
NO2NO3N        25     0.24875556       0.1[illegible]041629      0.02000000       0.69333333
TALK           25    99.75777778      16.16477040     71.50000000     146.00000000
TKJEL          25     0.36944444       0.13985313      0.20000000       0.75000000
TEMP           39    20.00126781       4.41115259     10.53500000      29.78000000
PH             32     6.87891580       0.39081741      6.22500000       7.38333333
SECCHI         38    24.39473684      21.92837169      4.00000000      81.00000000
CHLA           33     3.77222222       3.33702053      0.50000000      13.90000000
DO             31     3.93951613       2.01825819      0.80000000       7.60000000
DOSAT          31    43.37301827      21.80982970      8.31790714      82.22452540
TOC             0      .                .               .                .
DOC             0      .                .               .                .
POC             0      .                .               .                .
N_P            25     2.86742657       1.75912441      0.32520325       6.58712959

------------------------- PERIOD=1   WATER=LOW ----------------------------

TP              0      .                .               .                .
OP              0      .                .               .                .
NH3N            0      .                .               .                .
NO2NO3N         0      .                .               .                .
TALK            0      .                .               .                .
TKJEL           0      .                .               .                .
TEMP            8    29.83750000       1.93738799     27.40000000      33.40000000
PH              8     7.12354167       0.68760248      6.40000000       8.52000000
SECCHI          8    20.00000000      12.73914103      4.00000000      36.00000000
CHLA            8    21.97500000      15.90999237      3.30000000      53.80000000
DO              6     5.43055556       2.84691679      1.15000000       8.20000000
DOSAT           6    73.27860279      39.24060753     15.01835883     114.09209860
TOC             0      .                .               .                .
DOC             0      .                .               .                .
POC             0      .                .               .                .
N_P             0      .                .               .                .

------------------------- PERIOD=2   WATER=HIGH ---------------------------

TP             31     0.11989431       0.06347430      0.04400000       0.34518750
OP             31     0.04275309       0.02137407      0.01500000       0.12606250
NH3N           31     0.06615099       0.03764336      0.03000000       0.21562500
NO2NO3N        31     0.37217563       0.21251501      0.02000000       0.73555556
TALK           31    96.07477599      20.66144984     67.33333333     162.75000000
TKJEL          31     0.46397401       0.12834829      0.30000000       0.90625000
TEMP           52    13.87432158       2.43812986      8.25000000      17.90111111
PH             52     7.33989316       0.20994299      6.96666667       7.82500000
SECCHI         51    16.38235294      11.54609333      4.00000000      50.00000000
CHLA           46     1.23029348       0.70413185      0.13100000       3.84750000
DO             41     7.34067073       1.51009333      3.81666667      10.26666667
DOSAT          41    71.80130375      13.59072063     36.56083780      96.35734728
TOC             0      .                .               .                .
DOC             0      .                .               .                .
POC             0      .                .               .                .
N_P            31     4.44544148       2.22043790      0.96620366       9.00139895

------------------------- PERIOD=3   WATEP=HIGH ---------------------------

TP             56     0.24437917       0.09991896      0.06800000       0.56725000
OP             56     0.08069985       0.07395036      0.02750000       0.37150000
NH3N           57     0.07468470       0.07369963      0.02000000       0.46000000
NO2NO3N        57     0.38985867       0.34669565      0.02000000       1.28000000
TALK           57    77.66949318      23.34861690     46.33333333     163.50000000
TKJEL          56     0.70302579       0.14757132      0.40000000       1.12222222
TEMP           57    17.25774552       2.17978816     11.37500000      22.67500000
PH             57     7.20491691       0.22065762      6.82000000       7.85000000
SECCHI         57    25.43211501      21.81686236      4.50000000      99.50000000
CHLA           55     7.41273864       4.40732783      1.10000000      17.80000000
DO             56     5.24111607       2.09668632      1.90000000       9.00000000
DOSAT          56    54.67489545      21.41887195     22.19850618      98.34962225
TOC            57     8.26850292       2.24157072      4.09000000      14.65500000
DOC            57     4.64524728       1.51172242      1.58000000       9.15000000
POC            57     3.84704094       1.81914834      0.97500000      10.25000000
N_P            56     2.44038487       1.60731999      0.12718601       6.82462239
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      HI & LO H2O MEANS              ATCHAFALAYA B FLOODWAY - FORDOUCHE

                                 PERIOD=3   WATER=LOW

VARIABLE        N         MEAN        STANDARD          MINIMUM          MAXIMUM
                                      DEVIATION .        VALUE            VALUE

TP             57     0.17311182     0.14946462      0.05700000       1.01000000
OP             57     0.04018943     0.04446671      0.00875000       0.33583333
NH3N           57     0.18578752     0.07999637      0.02500000       0.39000000
NO2NO3N        57     0.26620130     0.24863600      0.02000000       0.96333333
TALK           57   103.39895572    29.27490671     21.00000000     236.50000000
TKJEL          57     0.89273322     0.35746122      0.46666667       2.30000000
TEMP           55    23.06481347     3.55401660     13.76666667      32.00000000
PH             56     7.45198041     0.35976484      6.61000000       8.20000000
SECCHI         53    17.89602426     8.18238283      6.00000000      49.83333333
CHLA           53    14.32359851    15.29813656      0.60000000     100.50000000
DO             55     6.24944024     1.87468311      1.60000000      10.60000000
DOSAT          54    72.01432521    20.36793204     24.53276958     121.31963159
TOC            58     9.70435119     3.01375906      5.97000000      21.65000000
DOC            58     6.21524774     1.93241938      3.74000000      12.40000000
POC            53     4.94258491     4.28663758      0.07000000      31.70000000
N_P            57     4.04408737     3.73490979      0.13910355      25.91880342
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   HIGH AND LOW WATER MEANS              ATCHAFALAYA B FLOODWAY - FORDOUCHE

                                  WATER=HIGH

VARIABLE        N         MEAN        STANDARD          MINIMUM          MAXIMUM
                                      DEVIATION          VALUE            VALUE

TP            112     0.18134857     0.10324687      0.04400000       0.56725000
OP            112     0.05819552     0.05822690      0.00400000       0.37150000
NH3N          113     0.06980273     0.05794373      0.02000000       0.46000000
NO2NO3N       113     0.35379007     0.28703534      0.02000000       1.28000000
TALK          113    87.60551868    23.36620706     46.33333333     163.50000000
TKJEL         112     0.56239955     0.20134484      0.20000000       1.12222222
TEMP          148    16.79193014     3.83802511      8.25000000      29.78000000
PH            141     7.18070932     0.31594515      6.22500000       7.85000000
SECCHI        146    22.00089422    19.22832375      4.00000000      99.50000000
CHLA          134     4.39386163     4.24968434      0.13100000      17.80000000
DO            128     5.59839844     2.30048689      0.80000000      10.26666667
DOSAT         128    57.42352473    22.07880483      8.31790714      98.34962225
TOC            57     8.26850292     2.24157072      4.09000000      14.65500000
DOC            57     4.64524728     1.51172242      1.58000000       9.15000000
POC            57     3.84704094     1.81914834      0.97500000      10.25000000
N_P           112     3.09067770     2.00471141      0.12718601       9.00139895

------------------------------- WATER=LOW ---------------------------------

TP             57     0.17311182     0.14946462      0.05700000       1.01000000
OP             57     0.04018943     0.04446671      0.00875000       0.33583333
NH3N           57     0.18578752     0.07999637      0.02500000       0.39000000
NO2NO3N        57     0.26620130     0.24863600      0.02000000       0.96333333
TALK           57   103.39895572    29.27490671     21.00000000     236.50000000
TKJEL          57     0.89273322     0.35746122      0.46666667       2.30000000
TEMP           63    23.92483715     4.07333389     13.76666667      33.40000000
PH             64     7.41092556     0.42132397      6.40000000       8.52000000
SECCHI         61    18.17195550     8.80174368      4.00000000      49.83333333
CHLA           61    15.32706100    15.46422672      0.60000000     100.50000000
DO             61     6.16889420     1.97455457      1.15000000      10.60000000
DOSAT          60    72.14075297    22.43444253     15.01835883     121.31963159
TOC            58     9.70435119     3.01375906      5.97000000      21.65000000
DOC            58     6.21524774     1.93241938      3.74000000      12.40000000
POC            53     4.94258491     4.28663758      0.07000000      31.70000000
N_P            57     4.04408737     3.73490979      0.13910355      25.91880342
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                  HI & LO H2O MEANS                   UPPER FLATS
                              PERIOD=1   WATER=HIGH

VARIABLE      N          MEAN          STANDARD          MINIMUM            MAXIMUM
                                       DEVIATION           VALUE              VALUE

TP            4      0.12686111      0.02085983      0.09700000         0.14350000
OP            4      0.02233333      0.01458881      0.00400000         0.03933333
NH3N          4      0.05763889      0.00509932      0.05000000         0.06055556
NO2NO3N       4      0.35916667      0.03059593      0.31500000         0.38500000
TALK          4     96.23611111      7.57192875     84.94444444       101.00000000
TKJEL         4      0.47361111      0.04914391      0.40000000         0.50000000
TEMP          4     20.58444444      1.68716652     18.80000000        22.66000000
PH            4      7.13722222      0.21581742      6.81888889         7.29500000
SECCHI        4     12.91666667     11.83333333      7.00000000        30.66666667
CHLA          4      3.09166667      1.38092159      1.50000000         4.86666667
DO            4      4.74722222      0.83623569      4.30000000         6.00000000
DOSAT         4     54.13675589     11.40627039     47.51905671        71.20453133
TOC           0       .                .               .                  .
DOC           0       .                .               .                  .
POC           0       .                .               .                  .
N_P           4      3.48639592      0.40428148      2.96167247         3.86597938

-------------------------- PERIOD=1   WATER=LOW --------------------------

TP            0       .                          .     .                  .
OP            0       .                          .     .                  .
NH3N          0       .                          .     .                  .
NO2NO3N       0       .                          .     .                  .
TALK          0       .                          .     .                  .
TKJEL         0       .                          .     .                  .
TEMP          1     28.80000000                  .    28.80000000        28.80000000
PH            1      6.73000000                  .     6.73000000         6.73000000
SECCHI        1     18.00000000                  .    18.00000000        18.00000000
CHLA          1     22.90000000                  .    22.90000000        22.90000000
DO            1      1.15000000                  .     1.15000000         1.15000000
DOSAT         1     15.01835883                  .    15.01835883        15.01835883
TOC           0       .                          .     .                  .
DOC           0       .                          .     .                  .
POC           0       .                          .     .                  .
N_P           0       .                          .     .                  .

-------------------------- PERIOD=2   WATER=HIGH --------------------------

TP            5      0.12669167      0.04865104      0.09195833         0.20700000
OP            5      0.05175000      0.02660187      0.01875000         0.08200000
NH3N          5      0.05550000      0.01177922      0.04500000         0.07500000
NO2NO3N       5      0.15950000      0.12738502      0.06666667         0.35250000
TALK          5     93.88333333      4.77900501     86.58333333        99.83333333
TKJEL         5      0.58250000      0.10476495      0.44583333         0.70000000
TEMP          5     15.70633333      2.17337436     12.00666667        17.73000000
PH            5      7.20250000      0.02457980      7.16666667         7.22500000
SECCHI        5     34.70000000     17.09385855     15.00000000        50.00000000
CHLA          5      0.50006667      0.17955135      0.29400000         0.74800000
DO            5      5.48000000      1.24400786      3.90000000         7.23333333
DOSAT         5     54.44752353     11.29889005     40.14755449        69.73907358
TOC           0       .                .               .                  .
DOC           0       .                .               .                  .
POC           0       .                .               .                  .
N_P           5      2.40899728      1.84880837      0.96620366         4.74437037

-------------------------- PERIOD=3   WATER=HIGH --------------------------

TP            5      0.11761667      0.01573992      0.10508333         0.14125000
OP            5      0.06268333      0.00865492      0.05091667         0.07525000
NH3N          5      0.06800000      0.02671610      0.04750000         0.11250000
NO2NO3N       5      0.19833333      0.02979677      0.15666667         0.22750000
TALK          5     83.31666667      4.41603769     77.00000000        87.50000000
TKJEL         5      0.70000000      0.05000000      0.65000000         0.75000000
TEMP          5     17.64833333      0.23119556     17.37500000        17.82500000
PH            5      7.08550000      0.02694903      7.04000000         7.11000000
SECCHI        5     36.30000000      9.99749969     23.50000000        46.00000000
CHLA          5      2.80000000      1.04880885      1.60000000         4.00000000
DO            5      4.31500000      1.02371871      3.52500000         6.10000000
DOSAT         5     46.76122140     11.14734430     38.06299983        66.17961966
TOC           5      8.14566667      1.47544137      6.24333333        10.33000000
DOC           5      6.15833333      1.22509240      4.30666667         7.65000000
POC           5      2.42133333      0.77885368      1.62000000         3.60500000
N_P           5      3.16438755      0.50284469      2.33963090         3.60229244
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          HI & LO H2O MEANS                    UPPER FLATS
                         PERIOD=3   WATER=LOW

VARIABLE      N          MEAN        STANDARD        MINIMUM         MAXIMUM
                                     DEVIATION        VALUE           VALUE

TP            4      0.10412500     0.02397351      0.08100000      0.12700000
OP            4      0.02450000     0.00843603      0.01400000      0.03450000
NH3N          4      0.24062500     0.11540463      0.13000000      0.35000000
NO2NO3N       4      0.17812500     0.14290695      0.06500000      0.38750000
TALK          4     98.87500000     5.13768755     92.00000000    103.50000000
TKJEL         4      1.18125000     0.19512282      0.92500000      1.40000000
TEMP          5     27.51000000     2.75420386     25.18333333     32.00000000
PH            5      7.66166667     0.30627693      7.45000000      8.20000000
SECCHI        3     18.00000000     3.71184291     14.00000000     21.33333333
CHLA          4     19.47500000    18.79971183      5.20000000     44.90000000
DO            5      5.98000000     1.96010204      4.00000000      8.80000000
DOSAT         5     79.04740147    26.82440918     53.50895281    120.17196302
TOC           5     10.08633333     0.88887132      9.33666667     11.54000000
DOC           5      7.77233333     2.32480393      5.47333333     11.60000000
POC           4      4.86166667     1.02822123      4.00666667      6.27000000
N_P           4      4.51773466     1.50293439      2.45098039      5.67901235
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       HIGH AND LOW WATER MEANS                    UPPER FLATS
                             WATER=HIGH

VARIABLE      N          MEAN        STANDARD        MINIMUM         MAXIMUM
                                     DEVIATION        VALUE           VALUE

TP           14      0.12349901     0.03042426      0.09195833      0.20700000
OP           14      0.04725000     0.02409009      0.00400000      0.08200000
NH3N         14      0.06057540     0.01738019      0.04500000      0.11250000
NO2NO3N      14      0.23041667     0.11363447      0.06666667      0.38500000
TALK         14     90.78174603     7.78114134     77.00000000    101.00000000
TKJEL        14      0.59335317     0.11634084      0.40000000      0.75000000
TEMP         14     17.79365079     2.49139745     12.00666667     22.66000000
PH           14      7.14206349     0.11747566      6.81888889      7.29500000
SECCHI       14     29.04761905    16.29593161      7.00000000     50.00000000
CHLA         14      2.06192857     1.50414915      0.29400000      4.86666667
DO           14      4.85456349     1.10723770      3.52500000      7.23333333
DOSAT        14     51.61362487    11.02922894     38.06299983     71.20453133
TOC           5      8.14566667     1.47544137      6.24333333     10.33000000
DOC           5      6.15833333     1.22509240      4.30666667      7.65000000
POC           5      2.42133333     0.77885368      1.62000000      3.60500000
N_P          14      2.98660770     1.17667776      0.96620366      4.74437037

-------------------------------- WATER=LOW --------------------------------

TP            4      0.10412500     0.02397351      0.08100000      0.12700000
OP            4      0.02450000     0.00843603      0.01400000      0.03450000
NH3N          4      0.24062500     0.11540463      0.13000000      0.35000000
NO2NO3N       4      0.17812500     0.14290695      0.06500000      0.38750000
TALK          4     98.87500000     5.13768755     92.00000000    103.50000000
TKJEL         4      1.18125000     0.19512282      0.92500000      1.40000000
TEMP          6     27.72500000     2.51909927     25.18333333     32.00000000
PH            6      7.50638889     0.46873401      6.73000000      8.20000000
SECCHI        4     18.00000000     3.03070704     14.00000000     21.33333333
CHLA          5     20.16000000    16.35292023      5.20000000     44.90000000
DO            6      5.17500000     2.63851284      1.15000000      8.80000000
DOSAT         6     68.37589437    35.48134053     15.01835883    120.17196302
TOC           5     10.08633333     0.88887132      9.33666667     11.54000000
DOC           5      7.77233333     2.32480393      5.47333333     11.60000000
POC           4      4.86166667     1.02822123      4.00666667      6.27000000
N_P           4      4.51773466     1.50293439      2.45098039      5.67901235
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                HI & LO H2O MEANS              BUFFALO COVE
                          PERIOD=1   WATER=HIGH

VARIABLE      N          MEAN        STANDARD         MINIMUM         MAXIMUM
                                    DEVIATION           VALUE           VALUE

TP           13    0,13426068      0.06363561      0,08000000      0,28650000
OP           13    0,02683333      0.00682486      0,01100000      0,03600000
NH3N         13    0,07076923      0,03616843      0,02000000      0,16333333
NO2NO3N      13    0,27440171      0,21826870      0,02000000      0,69333333
TALK         13  103,45299145     20,57906371     71,50000000    146,00000000
TKJEL        13    0,31880342      0,10771520      0,20000000      0,56666667
TEMP         13   24,20581197      3,51653031     19,31555556     29,78000000
PH            6    7,12000000      0,18094812      6,79666667      7,26666667
SECCHI       13   17,82051282     17,78972622      4,00000000     58,00000000
CHLA          7    3,97619048      2,53367792      1,60000000      8,83333333
DO            5    3,70666667      2,26058006      1,40000000      6,73333333
DOSAT         5   45,94902705     26,50166247     16,54840755     76,48231546
TOC           0        .               .               .               .
DOC           0        .               .               .               .
POC           0        .               .               .               .
N_P          13    2,89245562      2,15822963      0,32520325      6,58712959

--------------------------- PERIOD=1   WATER=LOW ---------------------------

TP            0        .               .               .               .
OP            0        .               .               .               .
NH3N          0        .               .               .               .
NO2NO3N       0        .               .               .               .
TALK          0        .               .               .               .
TKJEL         0        .               .               .               .
TEMP          3   28,93333333      2,00333056     27,40000000     31,20000000
PH            3    6,69333333      0,42442117      6,40000000      7,18000000
SECCHI        3   26,00000000     17,32050808      6,00000000     36,00000000
CHLA          3   10,80000000      6,78159273      3,30000000     16,50000000
DO            1    7,40000000          .           7,40000000      7,40000000
DOSAT         1   99,95940522          .          99,95940522     99,95940522
TOC           0        .               .               .               .
DOC           0        .               .               .               .
POC           0        .               .               .               .
N_P           0        .               .               .               .

--------------------------- PERIOD=2   WATER=HIGH --------------------------

TP           15    0,09424815      0,03646836      0,04400000      0,18366667
OP           15    0,03535185      0,01250678      0,01500000      0,06900000
NH3N         15    0,06214815      0,03316682      0,03000000      0,17277778
NO2NO3N      15    0,36388889      0,21231625      0,02000000      0,73555556
TALK         15  104,01018519     25,29282675     74,22222222    162,75000000
TKJEL        15    0,45129630      0,07275533      0,36666667      0,60000000
TEMP         15   14,80770370      2,20455236     11,10500000     17,46000000
PH           15    7,20212963      0,15955984      6,96666667      7,52083333
SECCHI       15   15,55000000      9,55455306      7,00000000     45,00000000
CHLA         10    1,14731667      0,62296905      0,13100000      2,20000000
DO            5    6,11111111      1,38752711      3,81666667      7,32777778
DOSAT         5   58,82865379     15,93251868     36,56083780     71,90158429
TOC           0        .               .               .               .
DOC           0        .               .               .               .
POC           0        .               .               .               .
N_P          15    4,21781672      1,78006051      1,13636364      7,17611408

--------------------------- PERIOD=3   WATER=HIGH --------------------------

TP           16    0,30387153      0,12630339      0,09450000      0,56725000
OP           16    0,14443316      0,11174798      0,02825000      0,37150000
NH3N         16    0,11573788      0,10854657      0,02750000      0,46000000
NO2NO3N      16    0,35934028      0,26470598      0,02000000      0,90500000
TALK         16   87,20659722     32,16994437     46,33333333    163,50000000
TKJEL        16    0,76371528      0,14086545      0,55000000      1,10000000
TEMP         16   17,49133102      1,10859628     14,61666667     19,15000000
PH           16    7,09301120      0,14404541      6,82000000      7,37777778
SECCHI       16   35,08802083     28,48677373      5,00000000     90,16666667
CHLA         15   10,49181944      3,69978688      3,80000000     17,80000000
DO           15    4,36487037      2,08502680      2,00000000      8,10000000
DOSAT        15   47,09423545     22,01392022     22,19850618     85,05536664
TOC          16    9,01627381      2,02458155      5,72750000     14,65500000
DOC          16    5,13422917      1,58607508      2,75000000      9,15000000
POC          16    4,07909375      1,84062202      1,43333333      7,79500000
N_P          16    2,48058906      1,73388998      0,14890282      6,82462239
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            HI & LO H2O MEANS                BUFFALO COVE
                          PERIOD=3   WATER=LOW

VARIABLE         N          MEAN      STANDARD         MINIMUM         MAXIMUM
                                      DEVIATION          VALUE           VALUE

TP              16    0,25879170    0,23793801      0,07950000      1,01000000
OP              16    0,04478769    0,07912314      0,00875000      0,33583333
NH3N            16    0,18062500    0,07877461      0,10541667      0,39000000
NO2NO3N         16    0,09185156    0,06402644      0,03858333      0,29125000
TALK            16  111,25610119   41,36031466     63,00000000    236,50000000
TKJEL           16    1,07101190    0,44334124      0,62250000      2,30000000
TEMP            16   21,66634954    4,26640159     15,62750000     29,81000000
PH              16    7,11130064    0,34272975      6,61000000      7,70000000
SECCHI          15   18,49928571    8,51317984      6,00000000     35,50000000
CHLA            16   16,34621693   23,03191825      0,60000000    100,50000000
DO              15    5,81497222    2,07054002      1,85000000      9,00000000
DOSAT           15   62,65658406   20,09822426     24,53276958     91,39756608
TOC             16   11,45181473    3,76150759      6,70000000     21,65000000
DOC             16    6,71437897    2,08922771      3,74000000     12,10000000
POC             14    7,06369728    7,19593388      3,30200000     31,70000000
N_P             16    1,77445906    0,75520504      0,47524752      3,02544731
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        HIGH AND LOW WATER MEANS                   BUFFALO COVE
                                WATER=HIGH

VARIABLE         N          MEAN      STANDARD         MINIMUM         MAXIMUM
                                      DEVIATION          VALUE           VALUE

TP              44    0,18229672    0,12660812      0,04400000      0,56725000
OP              44    0,07250095    0,08635562      0,01100000      0,37150000
NH3N            44    0,08418245    0,07367231      0,02000000      0,46000000
NO2NO3N         44    0,33579545    0,23245585      0,02000000      0,90500000
TALK            44   97,73516414   27,42897779     46,33333333    163,50000000
TKJEL           44    0,52575758    0,21871310      0,20000000      1,10000000
TEMP            44   18,56028199    4,52053093     11,10500000     29,78000000
PH              37    7,14162500    0,16046017      6,79666667      7,52083333
SECCHI          44   23,32556818   21,97394815      4,00000000     90,16666667
CHLA            32    6,14636849    5,07925870      0,13100000     17,80000000
DO              25    4,58247778    2,09397597      1,40000000      8,10000000
DOSAT           25   49,21207744   21,59496434     16,54840755     85,05536664
TOC             16    9,01627381    2,02458155      5,72750000     14,65500000
DOC             16    5,13422917    1,58607508      2,75000000      9,15000000
POC             16    4,07909375    1,84062202      1,43333333      7,79500000
N_P             44    3,19451361    1,99067625      0,14890282      7,17611405

------------------------------- WATER=LOW ----------------------------------

TP              16    0,25579170    0,23793801      0,07950000      1,01000000
OP              16    0,04478769    0,07912314      0,00875000      0,33583333
NH3N            16    0,18062500    0,07877461      0,10541667      0,39000000
NO2NO3N         16    0,09185156    0,06402644      0,03858333      0,29125000
TALK            16  111,25610119   41,36031466     63,00000000    236,50000000
TKJEL           16    1,07101190    0,44334124      0,62250000      2,30000000
TEMP            19   22,81376803    4,79856315     15,62750000     31,20000000
PH              19    7,04530580    0,37738581      6,40000000      7,70000000
SECCHI          18   19,74940476   10,16131945      6,00000000     36,00000000
CHLA            19   15,47049847   21,24817596      0,60000000    100,50000000
DO              16    5,91403646    2,03920241      1,85000000      9,00000000
DOSAT           16   64,98801038   21,54015219     24,53276958     99,95940522
TOC             16   11,45181473    3,76150759      6,70000000     21,65000000
DOC             16    6,71437897    2,08922771      3,74000000     12,10000000
POC             14    7,06369728    7,19593388      3,30200000     31,70000000
N_P             16    1,77445906    0,75520504      0,47524752      3,02544731
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            HI & LO H2O MEANS                      UPPER BELLE RIVER
                             PERIOD=1   WATER=HIGH
VARIABLE      N        MEAN          STANDARD        MINIMUM        MAXIMUM
                                     DEVIATION        VALUE          VALUE
TP            5    0,06550000      0.00713948      0.05400000     0.07266667
OP            5    0,02513889      0.00302063      0.02225000     0.02950000
NH3N          5    0,04138889      0.01396645      0.02500000     0.05750000
NO2NO3N       5    0,12950000      0.10879328      0.03500000     0.30083333
TALK          5   89,67222222      4.66742719     83.41666667    96.00000000
TKJEL         5    0,31944444      0.07323015      0.20000000     0.37500000
TEMP         17   17,47410301      2.94660229     10.83500000    23.26666667
PH           17    6,62921569      0.34720089      6.22500000     7.30333333
SECCHI       16   36,69791667     24.57898973      8.66666667    81.00000000
CHLA         17    2,69313725      2.37023688      0.50000000    10.93333333
DO           17    3,18692810      1.77073359      0.80000000     6.76666667
DOSAT        17   34,00417533     19.04754853      8.31790714    74.87160206
TOC           0         .               .               .              .
DOC           0         .               .               .              .
POC           0         .               .               .              .
N_P           5    2,62650242      1.79681930      1.11111111     5.33938172
-------------------------- PERIOD=1   WATER=LOW --------------------------
TP            0         .               .               .              .
OP            0         .               .               .              .
NH3N          0         .               .               .              .
NO2NO3N       0         .               .               .              .
TALK          0         .               .               .              .
TKJEL         0         .               .               .              .
TEMP          3   29,90000000      1.00388136     28.80000000    30.76666667
PH            3    7,21944444      0.36160266      6.84500000     7.56666667
SECCHI        3   20,00000000      9.16515139     12.00000000    30.00000000
CHLA          3   22,23333333     12.07034938     11.50000000    35.30000000
DO            3    5,27777778      2.30032204      3.90000000     7.93333333
DOSAT         3   70,20058470     30.81266887     50.92990001   105.73768560
TOC           0         .               .               .              .
DOC           0         .               .               .              .
POC           0         .               .               .              .
N_P           0         .               .               .              .
------------------------- PERIOD=2   WATER=HIGH --------------------------
TP            5    0,08506111      0.01433972      0.06750000     0.10222222
OP            5    0,03737778      0.00715464      0.02916667     0.04616667
NH3N          5    0,05183333      0.01387166      0.03916667     0.07444444
NO2NO3N       5    0,43011111      0.13182858      0.27666667     0.58500000
TALK          5   87,88333333      8.30319550     79.83333333   100.41666667
TKJEL         5    0,37333333      0.06128762      0.30000000     0.46111111
TEMP         19   13,98817982      1.06238208     12.06666667    16.34666667
PH           19    7,33475877      0.15011649      7.10555556     7.57777778
SECCHI       19   14,51754386      5.50613988      8.66666667    28.00000000
CHLA         19    1,10304386      0.32830247      0.58750000     1.66350000
DO           19    7,51735380      0.92272947      5.08888889     9.20000000
DOSAT        19   75,15397968      8.07089585     52.63743730    87.89377186
TOC           0         .               .               .              .
DOC           0         .               .               .              .
POC           0         .               .               .              .
N_P           5    6,33095539      1.72823591      4.37459326     7.74211688
------------------------- PERIOD=3   WATER=HIGH --------------------------
TP           19    0,22345906      0.06671310      0.15000000     0.40450000
OP           19    0,06190497      0.02429418      0.03266667     0.12250000
NH3N         19    0,04402047      0.03181447      0.02000000     0.11500000
NO2NO3N      19    0,22780702      0.25025607      0.02000000     0.82666667
TALK         19   72,53216374     11.62294963     52.33333333    94.75000000
TKJEL        19    0,64985380      0.13009333      0.40000000     0.85000000
TEMP         19   18,05375731      2.27884591     13.85555556    22.67500000
PH           19    7,12593567      0.16762149      6.89444444     7.43888889
SECCHI       19   21,64912281     11.75963549      6.50000000    52.66666667
CHLA         19    8,92368421      3.92818761      2.30000000    14.00000000
DO           19    4,85815789      1.93335907      1.90000000     8.60555556
DOSAT        19   49,04601649     19.21513912     22.26757715    84.62161464
TOC          19    7,36605263      2.18072527      4.09000000    14.36000000
DOC          19    4,32868421      1.17068812      2.65000000     7.16000000
POC          19    3,37657895      1.56143190      0.97500000     7.20000000
N_P          19    1,63356980      1.49788749      0.12718601     5.26666667
```

```
HI & LO H2O MEANS                          UPPER BELLE RIVER
                    PERIOD=3    WATER=LOW

VARIABLE      N        MEAN          STANDARD          MINIMUM           MAXIMUM
                                     DEVIATION          VALUE             VALUE

TP           19     0.12168129      0.08228472       0.05700000        0.37175000
OP           19     0.03513596      0.01589982       0.01550000        0.07300000
NH3N         19     0.20613450      0.07682673       0.05000000        0.34500000
NO2NO3N      19     0.25902047      0.16138290       0.03750000        0.52000000
TALK         19    97.29239766      5.53639728      83.50000000      107.00000000
TKJEL        19     0.69897661      0.12981208       0.50833333        0.95000000
TEMP         19    22.01827485      2.79720909      13.76666667       28.57500000
PH           19     7.41276316      0.19702656       7.10000000        7.87500000
SECCHI       19    19.66666667      5.80469159      12.33333333       32.00000000
CHLA         19    12.44815789      5.64570220       4.65000000       21.62000000
DO           19     6.04283626      1.73914873       2.90000000       10.60000000
DOSAT        19    67.96499705     19.79346349      37.86393724      121.31963159
TOC          19     8.12596491      1.63601540       6.00666667       11.20000000
DOC          19     5.95500000      1.15128283       3.95000000        7.92500000
POC          18     2.94759259      1.77828507       0.07000000        5.70000000
N_P          19     4.41086090      1.91791132       1.68028322        8.43104977
```

```
HIGH AND LOW WATER MEANS                   UPPER BELLE RIVER
                           WATER=HIGH

VARIABLE      N        MEAN          STANDARD          MINIMUM           MAXIMUM
                                     DEVIATION          VALUE             VALUE

TP           29     0.17236303      0.08983116       0.05400000        0.40450000
OP           29     0.05133716      0.02492342       0.02225000        0.12250000
NH3N         29     0.04491379      0.02678320       0.02000000        0.11500000
NO2NO3N      29     0.24573755      0.23051164       0.02000000        0.82666667
TALK         29    78.13409962     12.72191045      52.33333333      100.41666667
TKJEL        29     0.54521073      0.18436443       0.20000000        0.85000000
TEMP         55    16.47014394      2.83673296      10.53500000       23.26666667
PH           55     7.04454293      0.37264680       6.22500000        7.57777778
SECCHI       54    23.59876543     17.63430846       6.50000000       81.00000000
CHLA         55     4.29620303      4.33302207       0.50000000       14.00000000
DO           55     5.26022727      2.37938867       0.80000000        9.20000000
DOSAT        55    53.41583469     23.32160744       8.31790714       87.89377186
TOC          19     7.36605263      2.18072527       4.09000000       14.36000000
DOC          19     4.32868421      1.17066812       2.65000000        7.16000000
POC          19     3.37657895      1.56143190       0.97500000        7.20000000
N_P          29     2.61465915      2.33445176       0.12718601        7.74211688

------------------------------- WATER=LOW ---------------------------------

TP           19     0.12168129      0.08228472       0.05700000        0.37175000
OP           19     0.03513596      0.01589982       0.01550000        0.07300000
NH3N         19     0.20613450      0.07682673       0.05000000        0.34500000
NO2NO3N      19     0.25902047      0.16138290       0.03750000        0.52000000
TALK         19    97.29239766      5.53639728      83.50000000      107.00000000
TKJEL        19     0.69897661      0.12981208       0.50833333        0.95000000
TEMP         22    23.78396468      3.60416833      13.76666667       30.76666667
PH           22     7.38640152      0.22436059       6.84500000        7.87500000
SECCHI       22    19.71212121      6.07409754      12.00000000       32.00000000
CHLA         22    13.78250000      7.28075247       4.65000000       35.30000000
DO           22     5.93851010      1.78008760       2.90000000       10.60000000
DOSAT        22    68.26984991     20.66035040      37.86393724      121.31963159
TOC          19     8.12596491      1.63601540       6.00666667       11.20000000
DOC          19     5.95500000      1.15128283       3.95000000        7.92500000
POC          18     2.94759259      1.77828507       0.07000000        5.70000000
N_P          19     4.41086090      1.91791132       1.68028322        8.43104977
```

APPENDIX E. THE NUMBER OF DAYS MEAN DO CONCENTRATIONS WERE ABOVE AND BELOW 2 OR 4 MG/L OF DISSOLVED OXYGEN BY SEASON AND WATER LEVEL FOR STATIONS IN THE ATCHAFALAYA BASIN FLOODWAY

This appendix was generated by computer. Because of this it was necessary to print alphabetic characters in upper case. The number of days mean DO observations were above and below 2 and 4 mg/l is presented by season and water level for stations located within the Atchafalaya Basin Floodway. The percent of the number of observations below 2 and 4 mg/l of dissolved oxygen is presented in parenthesis.

Seasons of the year are defined as winter (December 21 to March 20), spring (March 21 to June 20), summer (June 21 to September 20), and fall (September 21 to December 20). High water is defined as when the Atchafalaya River at Simmesport has a discharge rate equal or above 4,799 cms (169,500 cfs), while low water is defined by a discharge rate of less than 4,799 cms (169,500 cfs).

```
PRIMARY STATION

********** HIGH WATER LEVELS                       WINTER      SPRING      SUMMER       FALL        TOTAL
 E001                       ABOVE/BELOW 2MG/L    2/ 0(  0%)  5/ 0(  0%)  0/ 0(  0%)  3/ 0(  0%)  10/ 0(  0%)
 E001                       ABOVE/BELOW 4MG/L    1/ 1( 50%)  2/ 3( 60%)  0/ 0(  0%)  3/ 0(  0%)   6/ 4( 40%)

**********  LOW WATER LEVELS
 E001                       ABOVE/BELOW 2MG/L    0/ 0(  0%)  1/ 0(  0%)  2/ 0(  0%)  1/ 0(  0%)   4/ 0(  0%)
 E001                       ABOVE/BELOW 4MG/L    0/ 0(  0%)  0/ 1(100%)  2/ 0(  0%)  1/ 0(  0%)   3/ 1( 25%)

**********  ALL WATER LEVELS
 E001                       ABOVE/BELOW 2MG/L    2/ 0(  0%)  6/ 0(  0%)  2/ 0(  0%)  4/ 0(  0%)  14/ 0(  0%)
 E001                       ABOVE/BELOW 4MG/L    1/ 1( 50%)  2/ 4( 66%)  2/ 0(  0%)  4/ 0(  0%)   9/ 5( 35%)

PRIMARY STATION

********** HIGH WATER LEVELS                       WINTER      SPRING      SUMMER       FALL        TOTAL
 E002                       ABOVE/BELOW 2MG/L    1/ 0(  0%)  5/ 0(  0%)  0/ 0(  0%)  3/ 0(  0%)   9/ 0(  0%)
 E002                       ABOVE/BELOW 4MG/L    1/ 0(  0%)  2/ 3( 60%)  0/ 0(  0%)  3/ 0(  0%)   6/ 3( 33%)

**********  LOW WATER LEVELS
 E002                       ABOVE/BELOW 2MG/L    2/ 0(  0%)  1/ 1( 50%)  1/ 1( 50%)  3/ 0(  0%)   7/ 2( 22%)
 E002                       ABOVE/BELOW 4MG/L    2/ 0(  0%)  1/ 1( 50%)  1/ 1( 50%)  2/ 1( 33%)   6/ 3( 33%)

**********  ALL WATER LEVELS
 E002                       ABOVE/BELOW 2MG/L    3/ 0(  0%)  6/ 1( 14%)  1/ 1( 50%)  6/ 0(  0%)  16/ 2( 11%)
 E002                       ABOVE/BELOW 4MG/L    3/ 0(  0%)  3/ 4( 57%)  1/ 1( 50%)  5/ 1( 16%)  12/ 6( 33%)

PRIMARY STATION

********** HIGH WATER LEVELS                       WINTER      SPRING      SUMMER       FALL        TOTAL
 E003                       ABOVE/BELOW 2MG/L    2/ 0(  0%)  2/ 1( 33%)  0/ 0(  0%)  2/ 0(  0%)   6/ 1( 14%)
 E003                       ABOVE/BELOW 4MG/L    2/ 0(  0%)  1/ 2( 66%)  0/ 0(  0%)  2/ 0(  0%)   5/ 2( 28%)

**********  LOW WATER LEVELS
 E003                       ABOVE/BELOW 2MG/L    0/ 0(  0%)  1/ 0(  0%)  1/ 0(  0%)  1/ 0(  0%)   3/ 0(  0%)
 E003                       ABOVE/BELOW 4MG/L    0/ 0(  0%)  0/ 1(100%)  0/ 1(100%)  1/ 0(  0%)   1/ 2( 66%)

**********  ALL WATER LEVELS
 E003                       ABOVE/BELOW 2MG/L    2/ 0(  0%)  3/ 1( 25%)  1/ 0(  0%)  3/ 0(  0%)   9/ 1( 10%)
 E003                       ABOVE/BELOW 4MG/L    2/ 0(  0%)  1/ 3( 75%)  0/ 1(100%)  3/ 0(  0%)   6/ 4( 40%)

PRIMARY STATION

********** HIGH WATER LEVELS                       WINTER      SPRING      SUMMER       FALL        TOTAL
 E004                       ABOVE/BELOW 2MG/L    1/ 0(  0%)  1/ 3( 75%)  0/ 0(  0%)  1/ 0(  0%)   3/ 3( 50%)
 E004                       ABOVE/BELOW 4MG/L    1/ 0(  0%)  1/ 3( 75%)  0/ 0(  0%)  1/ 0(  0%)   3/ 3( 50%)

**********  LOW WATER LEVELS
 E004                       ABOVE/BELOW 2MG/L    0/ 0(  0%)  0/ 1(100%)  1/ 0(  0%)  1/ 0(  0%)   2/ 1( 33%)
 E004                       ABOVE/BELOW 4MG/L    0/ 0(  0%)  0/ 1(100%)  0/ 1(100%)  1/ 0(  0%)   1/ 2( 66%)

**********  ALL WATER LEVELS
 E004                       ABOVE/BELOW 2MG/L    1/ 0(  0%)  1/ 4( 80%)  1/ 0(  0%)  2/ 0(  0%)   5/ 4( 44%)
 E004                       ABOVE/BELOW 4MG/L    1/ 0(  0%)  1/ 4( 80%)  0/ 1(100%)  2/ 0(  0%)   4/ 5( 55%)
```

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PRIMARY STATION                           WINTER      SPRING      SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E005         ABOVE/BELOW 2MG/L    1/  0(  0%)  2/  1( 33%)  0/  0(  0%)  1/  0(  0%)  4/  1( 20%)
 E005         ABOVE/BELOW 4MG/L    0/  1(100%)  2/  1( 33%)  0/  0(  0%)  1/  0(  0%)  3/  2( 40%)

**********  LOW WATER LEVELS
 E005         ABOVE/BELOW 2MG/L    0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  1/  0(  0%)
 E005         ABOVE/BELOW 4MG/L    0/  0(  0%)  0/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  1(100%)

**********  ALL WATER LEVELS
 E005         ABOVE/BELOW 2MG/L    1/  0(  0%)  2/  1( 33%)  1/  0(  0%)  1/  0(  0%)  5/  1( 16%)
 E005         ABOVE/BELOW 4MG/L    0/  1(100%)  2/  1( 33%)  0/  1(100%)  1/  0(  0%)  3/  3( 50%)


PRIMARY STATION                           WINTER      SPRING      SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E006         ABOVE/BELOW 2MG/L    1/  0(  0%)  4/  0(  0%)  0/  0(  0%)  1/  0(  0%)  6/  0(  0%)
 E006         ABOVE/BELOW 4MG/L    1/  0(  0%)  2/  2( 50%)  0/  0(  0%)  1/  0(  0%)  4/  2( 33%)

**********  LOW WATER LEVELS
 E006         ABOVE/BELOW 2MG/L    0/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  2/  1( 33%)
 E006         ABOVE/BELOW 4MG/L    0/  0(  0%)  0/  1(100%)  0/  1(100%)  1/  0(  0%)  1/  2( 66%)

**********  ALL WATER LEVELS
 E006         ABOVE/BELOW 2MG/L    1/  0(  0%)  4/  1( 20%)  1/  0(  0%)  2/  0(  0%)  8/  1( 11%)
 E006         ABOVE/BELOW 4MG/L    1/  0(  0%)  2/  3( 60%)  0/  1(100%)  2/  0(  0%)  5/  4( 44%)


PRIMARY STATION                           WINTER      SPRING      SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E007         ABOVE/BELOW 2MG/L    0/  0(  0%)  2/  0(  0%)  0/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E007         ABOVE/BELOW 4MG/L    0/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  2/  1( 33%)

**********  LOW WATER LEVELS
 E007         ABOVE/BELOW 2MG/L    0/  0(  0%)  0/  1(100%)  1/  0(  0%)  0/  0(  0%)  1/  1( 50%)
 E007         ABOVE/BELOW 4MG/L    0/  0(  0%)  0/  1(100%)  0/  1(100%)  0/  0(  0%)  0/  2(100%)

**********  ALL WATER LEVELS
 E007         ABOVE/BELOW 2MG/L    0/  0(  0%)  2/  1( 33%)  1/  0(  0%)  1/  0(  0%)  4/  1( 20%)
 E007         ABOVE/BELOW 4MG/L    0/  0(  0%)  1/  2( 66%)  0/  1(100%)  1/  0(  0%)  2/  3( 60%)


PRIMARY STATION                           WINTER      SPRING      SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E008         ABOVE/BELOW 2MG/L    2/  0(  0%)  5/  0(  0%)  1/  0(  0%)  1/  0(  0%)  9/  0(  0%)
 E008         ABOVE/BELOW 4MG/L    2/  0(  0%)  3/  2( 40%)  0/  1(100%)  1/  0(  0%)  6/  3( 33%)

**********  LOW WATER LEVELS
 E008         ABOVE/BELOW 2MG/L    1/  0(  0%)  1/  0(  0%)  3/  0(  0%)  3/  0(  0%)  8/  0(  0%)
 E008         ABOVE/BELOW 4MG/L    1/  0(  0%)  0/  1(100%)  1/  2( 66%)  3/  0(  0%)  5/  3( 37%)

**********  ALL WATER LEVELS
 E008         ABOVE/BELOW 2MG/L    3/  0(  0%)  6/  0(  0%)  4/  0(  0%)  4/  0(  0%) 17/  0(  0%)
 E008         ABOVE/BELOW 4MG/L    3/  0(  0%)  3/  3( 50%)  1/  3( 75%)  4/  0(  0%) 11/  6( 35%)
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PRIMARY STATION                                      WINTER        SPRING        SUMMER         FALL           TOTAL

********** HIGH WATER LEVELS
 E009                    ABOVE/BELOW 2MG/L      1/  0(   0%)  2/  1( 33%)  0/  0(   0%)  1/  0(   0%)   4/  1( 20%)
 E009                    ABOVE/BELOW 4MG/L      0/  1(100%)  1/  2( 66%)  0/  0(   0%)  1/  0(   0%)   2/  3( 60%)

**********  LOW WATER LEVELS
 E009                    ABOVE/BELOW 2MG/L      2/  0(   0%)  1/  0(   0%)  1/  0(   0%)  1/  0(   0%)   5/  0(   0%)
 E009                    ABOVE/BELOW 4MG/L      2/  0(   0%)  0/  1(100%)  0/  1(100%)  1/  0(   0%)   3/  2( 40%)

**********  ALL WATER LEVELS
 E009                    ABOVE/BELOW 2MG/L      3/  0(   0%)  3/  1( 25%)  1/  0(   0%)  2/  0(   0%)   9/  1( 10%)
 E009                    ABOVE/BELOW 4MG/L      2/  1( 33%)  1/  3( 75%)  0/  1(100%)  2/  0(   0%)   5/  5( 50%)

PRIMARY STATION                                      WINTER        SPRING        SUMMER         FALL           TOTAL

********** HIGH WATER LEVELS
 E010                    ABOVE/BELOW 2MG/L      1/  0(   0%)  3/  0(   0%)  0/  0(   0%)  1/  0(   0%)   5/  0(   0%)
 E010                    ABOVE/BELOW 4MG/L      1/  0(   0%)  1/  2( 66%)  0/  0(   0%)  1/  0(   0%)   3/  2( 40%)

**********  LOW WATER LEVELS
 E010                    ABOVE/BELOW 2MG/L      0/  0(   0%)  1/  0(   0%)  1/  0(   0%)  0/  0(   0%)   3/  0(   0%)
 E010                    ABOVE/BELOW 4MG/L      0/  0(   0%)  0/  1(100%)  0/  1(100%)  0/  0(   0%)   0/  2(100%)

**********  ALL WATER LEVELS
 E010                    ABOVE/BELOW 2MG/L      1/  0(   0%)  4/  0(   0%)  1/  0(   0%)  1/  0(   0%)   7/  0(   0%)
 E010                    ABOVE/BELOW 4MG/L      1/  0(   0%)  1/  3( 75%)  0/  1(100%)  1/  0(   0%)   3/  4( 57%)

PRIMARY STATION                                      WINTER        SPRING        SUMMER         FALL           TOTAL

********** HIGH WATER LEVELS
 E011                    ABOVE/BELOW 2MG/L      2/  0(   0%)  3/  1( 25%)  0/  0(   0%)  1/  0(   0%)   6/  1( 14%)
 E011                    ABOVE/BELOW 4MG/L      2/  0(   0%)  3/  1( 25%)  0/  0(   0%)  1/  0(   0%)   6/  1( 14%)

**********  LOW WATER LEVELS
 E011                    ABOVE/PELOW 2MG/L      1/  0(   0%)  2/  0(   0%)  2/  0(   0%)  5/  0(   0%)  10/  0(   0%)
 E011                    ABOVE/BELOW 4MG/L      1/  0(   0%)  1/  1( 50%)  1/  1( 50%)  5/  0(   0%)   8/  2( 20%)

**********  ALL WATER LEVELS
 E011                    ABOVC/BELOW 2MG/L      3/  0(   0%)  5/  1( 16%)  2/  0(   0%)  6/  0(   0%)  16/  1(  5%)
 E011                    ABOVE/BELOW 4MG/L      3/  0(   0%)  4/  2( 33%)  1/  1( 50%)  6/  0(   0%)  14/  3( 17%)

PRIMARY STATION                                      WINTER        SPRING        SUMMER         FALL           TOTAL

********** HIGH WATER LEVELS
 E012                    ABOVE/PFLOW 2MG/L      0/  0(   0%)  2/  0(   0%)  0/  0(   0%)  1/  0(   0%)   3/  0(   0%)
 E012                    ABOVE/BELOW 4MG/L      0/  0(   0%)  2/  0(   0%)  0/  0(   0%)  1/  0(   0%)   3/  0(   0%)

**********  LOW WATER LEVELS
 E012                    ABOVE/BELOW 2MG/L      0/  0(   0%)  1/  0(   0%)  1/  0(   0%)  0/  0(   0%)   2/  0(   0%)
 E012                    ABOVE/BELOW 4MG/L      0/  0(   0%)  1/  0(   0%)  1/  0(   0%)  0/  0(   0%)   2/  0(   0%)

**********  ALL WATER LEVELS
 E012                    ABOVE/PELOW 2MG/L      0/  0(   0%)  3/  0(   0%)  1/  0(   0%)  1/  0(   0%)   5/  0(   0%)
 E012                    ABOVE/PELOW 4MG/L      0/  0(   0%)  3/  0(   0%)  1/  0(   0%)  1/  0(   0%)   5/  0(   0%)
```

```
PRIMARY STATION                                       WINTER        SPRING        SUMMER        FALL          TOTAL

********** HIGH WATER LEVELS
 E013                    ABOVE/BELOW 2MG/L     1/  0(   0%)   4/  1( 20%)   0/  0(   0%)   1/  0(   0%)   6/  1( 14%)
 E013                    ABOVE/BELOW 4MG/L     1/  0(   0%)   2/  3( 60%)   0/  0(   0%)   1/  0(   0%)   4/  3( 42%)

**********  LOW WATER LEVELS
 E013                    ABOVE/BELOW 2MG/L     0/  0(   0%)   0/  0(   0%)   1/  0(   0%)   1/  0(   0%)   2/  0(   0%)
 E013                    ABOVE/BELOW 4MG/L     0/  0(   0%)   0/  0(   0%)   1/  0(   0%)   1/  0(   0%)   2/  0(   0%)

**********  ALL WATER LEVELS
 E013                    ABOVE/BELOW 2MG/L     1/  0(   0%)   4/  1( 20%)   1/  0(   0%)   2/  0(   0%)   8/  1( 11%)
 E013                    ABOVE/BELOW 4MG/L     1/  0(   0%)   2/  3( 60%)   1/  0(   0%)   2/  0(   0%)   6/  3( 33%)


PRIMARY STATION                                       WINTER        SPRING        SUMMER        FALL          TOTAL

********** HIGH WATER LEVELS
 E014                    ABOVE/BELOW 2MG/L     0/  0(   0%)   3/  0(   0%)   0/  0(   0%)   1/  0(   0%)   3/  0(   0%)
 E014                    ABOVE/BELOW 4MG/L     0/  0(   0%)   1/  1( 50%)   0/  0(   0%)   1/  0(   0%)   2/  1( 33%)

**********  LOW WATER LEVELS
 E014                    ABOVE/BELOW 2MG/L     0/  0(   0%)   1/  0(   0%)   1/  0(   0%)   0/  0(   0%)   2/  0(   0%)
 E014                    ABOVE/BELOW 4MG/L     0/  0(   0%)   1/  0(   0%)   1/  0(   0%)   0/  0(   0%)   2/  0(   0%)

**********  ALL WATER LEVELS
 E014                    ABOVE/BELOW 2MG/L     0/  0(   0%)   3/  0(   0%)   1/  0(   0%)   1/  0(   0%)   5/  0(   0%)
 E014                    ABOVE/BELOW 4MG/L     0/  0(   0%)   2/  1( 33%)   1/  0(   0%)   1/  0(   0%)   4/  1( 20%)


PRIMARY STATION                                       WINTER        SPRING        SUMMER        FALL          TOTAL

********** HIGH WATER LEVELS
 E015                    ABOVE/BELOW 2MG/L     1/  0(   0%)   2/  1( 33%)   0/  0(   0%)   1/  0(   0%)   4/  1( 20%)
 E015                    ABOVE/BELOW 4MG/L     1/  0(   0%)   1/  2( 66%)   0/  0(   0%)   1/  0(   0%)   3/  2( 40%)

**********  LOW WATER LEVELS
 E015                    ABOVE/BELOW 2MG/L     0/  0(   0%)   0/  0(   0%)   1/  0(   0%)   0/  0(   0%)   1/  0(   0%)
 E015                    ABOVE/BELOW 4MG/L     0/  0(   0%)   0/  0(   0%)   1/  0(   0%)   0/  0(   0%)   1/  0(   0%)

**********  ALL WATER LEVELS
 E015                    ABOVE/BELOW 2MG/L     1/  0(   0%)   2/  1( 33%)   1/  0(   0%)   1/  0(   0%)   5/  1( 16%)
 E015                    ABOVE/BELOW 4MG/L     1/  0(   0%)   1/  2( 66%)   1/  0(   0%)   1/  0(   0%)   4/  2( 33%)


PRIMARY STATION                                       WINTER        SPRING        SUMMER        FALL          TOTAL

********** HIGH WATER LEVELS
 E016                    ABOVE/BELOW 2MG/L     1/  0(   0%)   2/  1( 33%)   0/  0(   0%)   1/  0(   0%)   4/  1( 20%)
 E016                    ABOVE/BELOW 4MG/L     1/  0(   0%)   1/  2( 66%)   0/  0(   0%)   1/  0(   0%)   3/  2( 40%)

**********  LOW WATER LEVELS
 E016                    ABOVE/BELOW 2MG/L     0/  0(   0%)   1/  0(   0%)   1/  0(   0%)   0/  0(   0%)   2/  0(   0%)
 E016                    ABOVE/BELOW 4MG/L     0/  0(   0%)   1/  0(   0%)   1/  0(   0%)   0/  0(   0%)   2/  0(   0%)

**********  ALL WATER LEVELS
 E016                    ABOVE/BELOW 2MG/L     1/  0(   0%)   3/  1( 25%)   1/  0(   0%)   1/  0(   0%)   6/  1( 14%)
 E016                    ABOVE/BELOW 4MG/L     1/  0(   0%)   2/  2( 50%)   1/  0(   0%)   1/  0(   0%)   5/  2( 28%)
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PRIMARY STATION
                                                          WINTER      SPRING      SUMMER      FALL        TOTAL
********** HIGH WATER LEVELS
 E017                     ABOVE/BELOW 2MG/L      1/  0(  0%)  3/  0(  0%)  0/  0(  0%)  0/  0(  0%)  4/  0(  0%)
 E017                     ABOVE/BELOW 4MG/L      1/  0(  0%)  2/  1( 33%)  0/  0(  0%)  0/  0(  0%)  3/  1( 25%)

**********  LOW WATER LEVELS
 E017                     ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)
 E017                     ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)

**********  ALL WATER LEVELS
 E017                     ABOVE/BELOW 2MG/L      1/  0(  0%)  4/  0(  0%)  0/  0(  0%)  0/  0(  0%)  5/  0(  0%)
 E017                     ABOVE/BELOW 4MG/L      1/  0(  0%)  3/  1( 25%)  0/  0(  0%)  0/  0(  0%)  4/  1( 20%)

PRIMARY STATION
                                                          WINTER      SPRING      SUMMER      FALL        TOTAL
********** HIGH WATER LEVELS
 E018                     ABOVE/BELOW 2MG/L      0/  0(  0%)  2/  0(  0%)  0/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E018                     ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  2/  1( 33%)

**********  LOW WATER LEVELS
 E018                     ABOVE/BELOW 2MG/L      0/  0(  0%)  0/  1(100%)  1/  0(  0%)  0/  0(  0%)  1/  1( 50%)
 E018                     ABOVE/BELOW 4MG/L      0/  0(  0%)  0/  1(100%)  1/  0(  0%)  0/  0(  0%)  1/  1( 50%)

**********  ALL WATER LEVELS
 E018                     ABOVE/BELOW 2MG/L      0/  0(  0%)  2/  1( 33%)  1/  0(  0%)  1/  0(  0%)  4/  1( 20%)
 E018                     ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  2( 66%)  1/  0(  0%)  1/  0(  0%)  3/  2( 40%)

PRIMARY STATION
                                                          WINTER      SPRING      SUMMER      FALL        TOTAL
********** HIGH WATER LEVELS
 E019                     ABOVE/BELOW 2MG/L      1/  0(  0%)  5/  0(  0%)  0/  0(  0%)  2/  0(  0%)  8/  0(  0%)
 E019                     ABOVE/BELOW 4MG/L      1/  0(  0%)  2/  3( 60%)  0/  0(  0%)  2/  0(  0%)  5/  3( 37%)

**********  LOW WATER LEVELS
 E019                     ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  1( 50%)  0/  0(  0%)  2/  1( 33%)
 E019                     ABOVE/BELOW 4MG/L      0/  0(  0%)  0/  1(100%)  1/  1( 50%)  0/  0(  0%)  1/  2( 66%)

**********  ALL WATER LEVELS
 E019                     ABOVE/BELOW 2MG/L      1/  0(  0%)  6/  0(  0%)  1/  1( 50%)  2/  0(  0%) 10/  1(  9%)
 E019                     ABOVE/BELOW 4MG/L      1/  0(  0%)  2/  4( 66%)  1/  1( 50%)  2/  0(  0%)  6/  5( 45%)

PRIMARY STATION
                                                          WINTER      SPRING      SUMMER      FALL        TOTAL
********** HIGH WATER LEVELS
 E020                     ABOVE/BELOW 2MG/L      1/  0(  0%)  5/  0(  0%)  0/  0(  0%)  1/  0(  0%)  7/  0(  0%)
 E020                     ABOVE/BELOW 4MG/L      1/  0(  0%)  4/  1( 20%)  0/  0(  0%)  1/  0(  0%)  6/  1( 14%)

**********  LOW WATER LEVELS
 E020                     ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  2/  0(  0%)  1/  0(  0%)  4/  0(  0%)
 E020                     ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  2/  0(  0%)  1/  0(  0%)  4/  0(  0%)

**********  ALL WATER LEVELS
 E020                     ABOVE/BELOW 2MG/L      1/  0(  0%)  6/  0(  0%)  2/  0(  0%)  2/  0(  0%) 11/  0(  0%)
 E020                     ABOVE/BELOW 4MG/L      1/  0(  0%)  5/  1( 16%)  2/  0(  0%)  2/  0(  0%) 10/  1(  9%)
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PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E021                          ABOVE/BELOW 2MG/L     1/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  3/  1( 25%)
 E021                          ABOVE/BELOW 4MG/L     0/  1(100%)  0/  2(100%)  0/  0(  0%)  1/  0(  0%)  1/  3( 75%)

**********  LOW WATER LEVELS
 E021                          ABOVE/BELOW 2MG/L     0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  1/  0(  0%)
 E021                          ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  1(100%)

**********  ALL WATER LEVELS
 E021                          ABOVE/BELOW 2MG/L     1/  0(  0%)  1/  1( 50%)  1/  0(  0%)  1/  0(  0%)  4/  1( 20%)
 E021                          ABOVE/BELOW 4MG/L     0/  1(100%)  0/  2(100%)  0/  1(100%)  1/  0(  0%)  1/  4( 80%)

PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E022                          ABOVE/BELOW 2MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
 E022                          ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

**********  LOW WATER LEVELS
 E022                          ABOVE/BELOW 2MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
 E022                          ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

**********  ALL WATER LEVELS
 E022                          ABOVE/BELOW 2MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
 E022                          ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E023                          ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)
 E023                          ABOVE/BELOW 4MG/L     0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)

**********  LOW WATER LEVELS
 E023                          ABOVE/BELOW 2MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  1/  0(  0%)
 E023                          ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  1/  0(  0%)

**********  ALL WATER LEVELS
 E023                          ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  1/  0(  0%)  2/  0(  0%)
 E023                          ABOVE/BELOW 4MG/L     0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  1/  0(  0%)  2/  0(  0%)

PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E024                          ABOVE/BELOW 2MG/L     1/  0(  0%)  2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  3/  0(  0%)
 E024                          ABOVE/BELOW 4MG/L     1/  0(  0%)  1/  1( 50%)  0/  0(  0%)  0/  0(  0%)  2/  1( 33%)

**********  LOW WATER LEVELS
 E024                          ABOVE/BELOW 2MG/L     2/  0(  0%)  0/  1(100%)  2/  0(  0%)  3/  0(  0%)  7/  1( 12%)
 E024                          ABOVE/BELOW 4MG/L     2/  0(  0%)  0/  1(100%)  1/  1( 50%)  3/  0(  0%)  6/  2( 25%)

**********  ALL WATER LEVELS
 E024                          ABOVE/BELOW 2MG/L     3/  0(  0%)  2/  1( 33%)  2/  0(  0%)  3/  0(  0%) 10/  1(  9%)
 E024                          ABOVE/BELOW 4MG/L     3/  0(  0%)  1/  2( 66%)  1/  1( 50%)  3/  0(  0%)  8/  3( 27%)
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PRIMARY STATION                                    WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E025                       ABOVE/BELOW 2MG/L    1/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  1/  1( 50%)
 E025                       ABOVE/BELOW 4MG/L    0/  1(100%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  0/  2(100%)

**********  LOW WATER LEVELS
 E025                       ABOVE/BELOW 2MG/L    0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  2/  0(  0%)  3/  0(  0%)
 E025                       ABOVE/BELOW 4MG/L    0/  0(  0%)  0/  0(  0%)  0/  1(100%)  2/  0(  0%)  2/  1( 33%)

**********  ALL WATER LEVELS
 E025                       ABOVE/BELOW 2MG/L    1/  0(  0%)  0/  1(100%)  1/  0(  0%)  2/  0(  0%)  4/  1( 20%)
 E025                       ABOVE/BELOW 4MG/L    0/  1(100%)  0/  1(100%)  0/  1(100%)  2/  0(  0%)  2/  3( 60%)


PRIMARY STATION                                    WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E026                       ABOVE/BELOW 2MG/L    2/  2( 50%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  3/  2( 40%)
 E026                       ABOVE/BELOW 4MG/L    2/  2( 50%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  2/  3( 60%)

**********  LOW WATER LEVELS
 E026                       ABOVE/BELOW 2MG/L    0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
 E026                       ABOVE/BELOW 4MG/L    0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

**********  ALL WATER LEVELS
 E026                       ABOVE/BELOW 2MG/L    2/  2( 50%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  3/  2( 40%)
 E026                       ABOVE/BELOW 4MG/L    2/  2( 50%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  2/  3( 60%)


PRIMARY STATION                                    WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E027                       ABOVE/BELOW 2MG/L    2/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  3/  0(  0%)
 E027                       ABOVE/BELOW 4MG/L    1/  1( 50%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  1/  2( 66%)

**********  LOW WATER LEVELS
 E027                       ABOVE/BELOW 2MG/L    0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
 E027                       ABOVE/BELOW 4MG/L    0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

**********  ALL WATER LEVELS
 E027                       ABOVE/BELOW 2MG/L    2/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  3/  0(  0%)
 E027                       ABOVE/BELOW 4MG/L    1/  1( 50%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  1/  2( 66%)


PRIMARY STATION                                    WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E028                       ABOVE/BELOW 2MG/L    2/  1( 33%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  3/  1( 25%)
 E028                       ABOVE/BELOW 4MG/L    0/  3(100%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  3( 75%)

**********  LOW WATER LEVELS
 E028                       ABOVE/BELOW 2MG/L    1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)
 E028                       ABOVE/BELOW 4MG/L    1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)

**********  ALL WATER LEVELS
 E028                       ABOVE/BELOW 2MG/L    3/  1( 25%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  4/  1( 20%)
 E028                       ABOVE/BELOW 4MG/L    1/  3( 75%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  3( 60%)
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PRIMARY STATION                                          WINTER      SPRING      SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E029                           ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)
 E029                           ABOVE/BELOW 4MG/L     0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)

**********  LOW WATER LEVELS
 E029                           ABOVE/BELOW 2MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  1/  0(  0%)
 E029                           ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  1/  0(  0%)

**********  ALL WATER LEVELS
 E029                           ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  1/  0(  0%)  2/  0(  0%)
 E029                           ABOVE/BELOW 4MG/L     0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  1/  0(  0%)  2/  0(  0%)


PRIMARY STATION                                          WINTER      SPRING      SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E030                           ABOVE/BELOW 2MG/L     1/  0(  0%)  2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  3/  0(  0%)
 E030                           ABOVE/BELOW 4MG/L     1/  0(  0%)  2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  3/  0(  0%)

**********  LOW WATER LEVELS
 E030                           ABOVE/BELOW 2MG/L     2/  0(  0%)  0/  1(100%)  2/  0(  0%)  3/  0(  0%)  7/  1( 12%)
 E030                           ABOVE/BELOW 4MG/L     2/  0(  0%)  0/  1(100%)  2/  0(  0%)  3/  0(  0%)  7/  1( 12%)

**********  ALL WATER LEVELS
 E030                           ABOVE/BELOW 2MG/L     3/  0(  0%)  2/  1( 33%)  2/  0(  0%)  3/  0(  0%) 10/  1(  9%)
 E030                           ABOVE/BELOW 4MG/L     3/  0(  0%)  2/  1( 33%)  3/  0(  0%)  3/  0(  0%) 10/  1(  9%)


PRIMARY STATION                                          WINTER      SPRING      SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E031                           ABOVE/BELOW 2MG/L     1/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  1/  1( 50%)
 E031                           ABOVE/BELOW 4MG/L     1/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  1/  1( 50%)

**********  LOW WATER LEVELS
 E031                           ABOVE/BELOW 2MG/L     2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)
 E031                           ABOVE/BELOW 4MG/L     2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)

**********  ALL WATER LEVELS
 E031                           ABOVE/BELOW 2MG/L     3/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  3/  1( 25%)
 E031                           ABOVE/BELOW 4MG/L     3/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  3/  1( 25%)


PRIMARY STATION                                          WINTER      SPRING      SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E032                           ABOVE/BELOW 2MG/L     4/  0(  0%)  2/  0(  0%)  1/  0(  0%)  0/  0(  0%)  7/  0(  0%)
 E032                           ABOVE/BELOW 4MG/L     4/  0(  0%)  1/  1( 50%)  1/  0(  0%)  0/  0(  0%)  6/  1( 14%)

**********  LOW WATER LEVELS
 E032                           ABOVE/BELOW 2MG/L     2/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  4/  1( 20%)
 E032                           ABOVE/BELOW 4MG/L     2/  0(  0%)  0/  1(100%)  0/  1(100%)  1/  0(  0%)  3/  2( 40%)

**********  ALL WATER LEVELS
 E032                           ABOVE/BELOW 2MG/L     6/  0(  0%)  2/  1( 33%)  2/  0(  0%)  1/  0(  0%) 11/  1(  8%)
 E032                           ABOVE/BELOW 4MG/L     6/  0(  0%)  1/  2( 66%)  1/  1( 50%)  1/  0(  0%)  9/  3( 25%)
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PRIMARY STATION                                            WINTER      SPRING      SUMMER      FALL        TOTAL

********** HIGH WATER LEVELS
 E033                         ABOVE/BELOW 2MG/L      1/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  3/  1( 25%)
 E033                         ABOVE/BELOW 4MG/L      1/  0(  0%)  0/  2(100%)  0/  0(  0%)  1/  0(  0%)  2/  2( 50%)

**********  LOW WATER LEVELS
 E033                         ABOVE/BELOW 2MG/L      0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
 E033                         ABOVE/BELOW 4MG/L      0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

**********  ALL WATER LEVELS
 E033                         ABOVE/BELOW 2MG/L      1/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  3/  1( 25%)
 E033                         ABOVE/BELOW 4MG/L      1/  0(  0%)  0/  2(100%)  0/  0(  0%)  1/  0(  0%)  2/  2( 50%)


PRIMARY STATION                                            WINTER      SPRING      SUMMER      FALL        TOTAL

********** HIGH WATER LEVELS
 E034                         ABOVE/BELOW 2MG/L      1/  0(  0%)  3/  0(  0%)  0/  0(  0%)  2/  0(  0%)  6/  0(  0%)
 E034                         ABOVE/BELOW 4MG/L      1/  0(  0%)  1/  2( 66%)  0/  0(  0%)  2/  0(  0%)  4/  2( 33%)

**********  LOW WATER LEVELS
 E034                         ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E034                         ABOVE/BELOW 4MG/L      0/  0(  0%)  0/  1(100%)  0/  1(100%)  1/  0(  0%)  1/  2( 66%)

**********  ALL WATER LEVELS
 E034                         ABOVE/BELOW 2MG/L      1/  0(  0%)  4/  0(  0%)  1/  0(  0%)  3/  0(  0%)  9/  0(  0%)
 E034                         ABOVE/BELOW 4MG/L      1/  0(  0%)  1/  3( 75%)  0/  1(100%)  3/  0(  0%)  5/  4( 44%)


PRIMARY STATION                                            WINTER      SPRING      SUMMER      FALL        TOTAL

********** HIGH WATER LEVELS
 E035                         ABOVE/BELOW 2MG/L      1/  0(  0%)  3/  0(  0%)  0/  0(  0%)  0/  0(  0%)  4/  0(  0%)
 E035                         ABOVE/BELOW 4MG/L      1/  0(  0%)  2/  1( 33%)  0/  0(  0%)  0/  0(  0%)  3/  1( 25%)

**********  LOW WATER LEVELS
 E035                         ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E035                         ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E035                         ABOVE/BELOW 2MG/L      1/  0(  0%)  4/  0(  0%)  1/  0(  0%)  1/  0(  0%)  7/  0(  0%)
 E035                         ABOVE/BELOW 4MG/L      1/  0(  0%)  3/  1( 25%)  1/  0(  0%)  1/  0(  0%)  6/  1( 14%)


PRIMARY STATION                                            WINTER      SPRING      SUMMER      FALL        TOTAL

********** HIGH WATER LEVELS
 E036                         ABOVE/BELOW 2MG/L      2/  0(  0%)  3/  0(  0%)  0/  0(  0%)  1/  0(  0%)  6/  0(  0%)
 E036                         ABOVE/BELOW 4MG/L      2/  0(  0%)  3/  0(  0%)  0/  0(  0%)  1/  0(  0%)  6/  0(  0%)

**********  LOW WATER LEVELS
 E036                         ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E036                         ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E036                         ABOVE/BELOW 2MG/L      2/  0(  0%)  4/  0(  0%)  1/  0(  0%)  2/  0(  0%)  9/  0(  0%)
 E036                         ABOVE/BELOW 4MG/L      2/  0(  0%)  4/  0(  0%)  1/  0(  0%)  2/  0(  0%)  9/  0(  0%)
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PRIMARY STATION                                              WINTER        SPRING        SUMMER        FALL          TOTAL

********** HIGH WATER LEVELS
 E037                            ABOVE/BELOW 2MG/L          0/  0(  0%)   2/  0(  0%)   0/  0(  0%)   1/  0(  0%)   3/  0(  0%)
 E037                            ABOVE/BELOW 4MG/L          0/  0(  0%)   2/  0(  0%)   0/  0(  0%)   1/  0(  0%)   3/  0(  0%)

**********  LOW WATER LEVELS
 E037                            ABOVE/BELOW 2MG/L          0/  0(  0%)   1/  0(  0%)   1/  0(  0%)   1/  0(  0%)   3/  0(  0%)
 E037                            ABOVE/BELOW 4MG/L          0/  0(  0%)   1/  0(  0%)   1/  0(  0%)   1/  0(  0%)   3/  0(  0%)

**********  ALL WATER LEVELS
 E037                            ABOVE/BELOW 2MG/L          0/  0(  0%)   3/  0(  0%)   1/  0(  0%)   2/  0(  0%)   6/  0(  0%)
 E037                            ABOVE/PELOW 4MG/L          0/  0(  0%)   3/  0(  0%)   1/  0(  0%)   2/  0(  0%)   6/  0(  0%)

PRIMARY STATION                                              WINTER        SPRING        SUMMER        FALL          TOTAL

********** HIGH WATER LEVELS
 E038                            ABOVE/BELOW 2MG/L          0/  0(  0%)   3/  0(  0%)   0/  0(  0%)   2/  0(  0%)   5/  0(  0%)
 E038                            ABOVE/BELOW 4MG/L          0/  0(  0%)   3/  0(  0%)   0/  0(  0%)   2/  0(  0%)   5/  0(  0%)

**********  LOW WATER LEVFLS
 E038                            ABOVE/BELOW 2MG/L          0/  0(  0%)   1/  0(  0%)   1/  0(  0%)   1/  0(  0%)   3/  0(  0%)
 E038                            APOVE/PELOW 4MG/L          0/  0(  0%)   1/  0(  0%)   1/  0(  0%)   1/  0(  0%)   3/  0(  0%)

**********  ALL WATER LEVELS
 E038                            ABOVE/BELOW 2MG/L          0/  0(  0%)   4/  0(  0%)   1/  0(  0%)   3/  0(  0%)   8/  0(  0%)
 E038                            ABOVE/PELOW 4MG/L          0/  0(  0%)   4/  0(  0%)   1/  0(  0%)   3/  0(  0%)   8/  0(  0%)

PRIMARY STATION                                              WINTER        SPRING        SUMMER        FALL          TOTAL

********** HIGH WATER LEVELS
 E039                            ABOVE/BELOW 2MG/L          1/  0(  0%)   2/  0(  0%)   0/  0(  0%)   1/  0(  0%)   4/  0(  0%)
 E039                            ABOVE/BELOW 4MG/L          1/  0(  0%)   2/  0(  0%)   0/  0(  0%)   1/  0(  0%)   4/  0(  0%)

**********  LOW WATER LEVELS
 E039                            ABOVE/BELOW 2MG/L          0/  0(  0%)   1/  0(  0%)   1/  0(  0%)   1/  0(  0%)   3/  0(  0%)
 E039                            ABOVE/BELOW 4MG/L          0/  0(  0%)   1/  0(  0%)   1/  0(  0%)   1/  0(  0%)   3/  0(  0%)

**********  ALL WATER LEVELS
 E039                            ABOVE/BELOW 2MG/L          1/  0(  0%)   3/  0(  0%)   1/  0(  0%)   2/  0(  0%)   7/  0(  0%)
 E039                            ABOVE/BELOW 4MG/L          1/  0(  0%)   3/  0(  0%)   1/  0(  0%)   2/  0(  0%)   7/  0(  0%)

PRIMARY STATION                                              WINTER        SPRING        SUMMER        FALL          TOTAL

********** HIGH WATER LEVELS
 E040                            ABOVE/BELOW 2MG/L          0/  0(  0%)   1/  0(  0%)   0/  0(  0%)   0/  0(  0%)   1/  0(  0%)
 E040                            ABOVE/BELOW 4MG/L          0/  0(  0%)   0/  1(100%)   0/  0(  0%)   0/  0(  0%)   0/  1(100%)

**********  LOW WATER LEVELS
 E040                            ABOVE/BELOW 2MG/L          0/  0(  0%)   0/  0(  0%)   1/  1( 50%)   0/  0(  0%)   1/  1( 50%)
 E040                            ABOVE/BELOW 4MG/L          0/  0(  0%)   0/  0(  0%)   1/  1( 50%)   0/  0(  0%)   1/  1( 50%)

**********  ALL WATER LEVELS
 E040                            ABOVE/BELOW 2MG/L          0/  0(  0%)   1/  0(  0%)   1/  1( 50%)   0/  0(  0%)   2/  1( 33%)
 E040                            ABOVE/BELOW 4MG/L          0/  0(  0%)   0/  1(100%)   1/  1( 50%)   0/  0(  0%)   1/  2( 66%)
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PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E041                         ABOVE/BELOW 2MG/L     2/  0(  0%)  1/  2( 66%)  0/  0(  0%)  1/  0(  0%)  4/  2( 33%)
 E041                         ABOVE/BELOW 4MG/L     1/  1( 50%)  1/  2( 66%)  0/  0(  0%)  1/  0(  0%)  3/  3( 50%)

**********  LOW WATER LEVELS
 E041                         ABOVE/BELOW 2MG/L     0/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  2/  1( 33%)
 E041                         ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  0/  1(100%)  1/  0(  0%)  1/  2( 66%)

**********  ALL WATER LEVELS
 E041                         ABOVE/BELOW 2MG/L     2/  0(  0%)  1/  3( 75%)  1/  0(  0%)  2/  0(  0%)  6/  3( 33%)
 E041                         ABOVE/BELOW 4MG/L     1/  1( 50%)  1/  3( 75%)  0/  1(100%)  2/  0(  0%)  4/  5( 55%)


PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E042                         ABOVE/BELOW 2MG/L     2/  0(  0%)  1/  2( 66%)  0/  0(  0%)  1/  0(  0%)  4/  2( 33%)
 E042                         ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  2( 66%)  0/  0(  0%)  1/  0(  0%)  4/  2( 33%)

**********  LOW WATER LEVELS
 E042                         ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E042                         ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  2/  1( 33%)

**********  ALL WATER LEVELS
 E042                         ABOVE/BELOW 2MG/L     2/  0(  0%)  2/  2( 50%)  1/  0(  0%)  2/  0(  0%)  7/  2( 22%)
 E042                         ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  3( 75%)  1/  0(  0%)  2/  0(  0%)  6/  3( 33%)


PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E043                         ABOVE/BELOW 2MG/L     3/  0(  0%)  1/  2( 66%)  0/  0(  0%)  2/  0(  0%)  6/  2( 25%)
 E043                         ABOVE/BELOW 4MG/L     3/  0(  0%)  1/  2( 66%)  0/  0(  0%)  2/  0(  0%)  6/  2( 25%)

**********  LOW WATER LEVELS
 E043                         ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  2/  0(  0%)  0/  0(  0%)  3/  0(  0%)
 E043                         ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  0/  2(100%)  0/  0(  0%)  0/  3(100%)

**********  ALL WATER LEVELS
 E043                         ABOVE/BELOW 2MG/L     3/  0(  0%)  2/  2( 50%)  2/  0(  0%)  2/  0(  0%)  9/  2( 18%)
 E043                         ABOVE/BELOW 4MG/L     3/  0(  0%)  1/  3( 75%)  0/  2(100%)  2/  0(  0%)  6/  5( 45%)


PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL        TOTAL

********** HIGH WATER LEVELS
 E044                         ABOVE/BELOW 2MG/L     2/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  4/  1( 20%)
 E044                         ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  4/  1( 20%)

**********  LOW WATER LEVELS
 E044                         ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E044                         ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  2/  1( 33%)

**********  ALL WATER LEVELS
 E044                         ABOVE/BELOW 2MG/L     2/  0(  0%)  2/  1( 33%)  1/  0(  0%)  2/  0(  0%)  7/  1( 12%)
 E044                         ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  2( 66%)  1/  0(  0%)  2/  0(  0%)  6/  2( 25%)
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PRIMARY STATION                                      WINTER       SPRING       SUMMER        FALL         TOTAL

********** HIGH WATER LEVELS
 E049                   ABOVE/BELOW 2MG/L      0/  0(  0%)  3/  0(  0%)  0/  0(  0%)  1/  0(  0%)   4/  0(  0%)
 E049                   ABOVE/BELOW 4MG/L      0/  0(  0%)  3/  0(  0%)  0/  0(  0%)  1/  0(  0%)   4/  0(  0%)

**********  LOW WATER LEVELS
 E049                   ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)   3/  0(  0%)
 E049                   ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)   3/  0(  0%)

**********  ALL WATER LEVELS
 E049                   ABOVE/BELOW 2MG/L      0/  0(  0%)  4/  0(  0%)  1/  0(  0%)  2/  0(  0%)   7/  0(  0%)
 E049                   ABOVE/BELOW 4MG/L      0/  0(  0%)  4/  0(  0%)  1/  0(  0%)  2/  0(  0%)   7/  0(  0%)

PRIMARY STATION                                      WINTER       SPRING       SUMMER        FALL         TOTAL

********** HIGH WATER LEVELS
 E050                   ABOVE/BELOW 2MG/L      2/  0(  0%)  4/  0(  0%)  0/  0(  0%)  2/  0(  0%)   8/  0(  0%)
 E050                   ABOVE/BELOW 4MG/L      2/  0(  0%)  2/  2( 50%)  0/  0(  0%)  2/  0(  0%)   6/  2( 25%)

**********  LOW WATER LEVELS
 E050                   ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)   3/  0(  0%)
 E050                   ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)   3/  0(  0%)

**********  ALL WATER LEVELS
 E050                   ABOVE/BELOW 2MG/L      2/  0(  0%)  5/  0(  0%)  1/  0(  0%)  3/  0(  0%)  11/  0(  0%)
 E050                   ABOVE/BELOW 4MG/L      2/  0(  0%)  3/  2( 40%)  1/  0(  0%)  3/  0(  0%)   9/  2( 18%)

PRIMARY STATION                                      WINTER       SPRING       SUMMER        FALL         TOTAL

********** HIGH WATER LEVELS
 E051                   ABOVE/BELOW 2MG/L      2/  0(  0%)  5/  0(  0%)  0/  0(  0%)  1/  0(  0%)   8/  0(  0%)
 E051                   ABOVE/BELOW 4MG/L      2/  0(  0%)  3/  2( 40%)  0/  0(  0%)  1/  0(  0%)   6/  2( 25%)

**********  LOW WATER LEVELS
 E051                   ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  2/  0(  0%)  1/  0(  0%)   4/  0(  0%)
 E051                   ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  2/  0(  0%)  1/  0(  0%)   4/  0(  0%)

**********  ALL WATER LEVELS
 E051                   ABOVE/BELOW 2MG/L      2/  0(  0%)  6/  0(  0%)  2/  0(  0%)  2/  0(  0%)  12/  0(  0%)
 E051                   ABOVE/BELOW 4MG/L      2/  0(  0%)  4/  2( 33%)  2/  0(  0%)  2/  0(  0%)  10/  2( 16%)

PRIMARY STATION                                      WINTER       SPRING       SUMMER        FALL         TOTAL

********** HIGH WATER LEVELS
 E052                   ABOVE/BELOW 2MG/L      2/  0(  0%)  3/  1( 25%)  0/  0(  0%)  1/  0(  0%)   6/  1( 14%)
 E052                   ABOVE/BELOW 4MG/L      2/  0(  0%)  3/  1( 25%)  0/  0(  0%)  1/  0(  0%)   6/  1( 14%)

**********  LOW WATER LEVELS
 E052                   ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  1/  0(  0%)   2/  0(  0%)
 E052                   ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  1/  0(  0%)   2/  0(  0%)

**********  ALL WATER LEVELS
 E052                   ABOVE/BELOW 2MG/L      2/  0(  0%)  4/  1( 20%)  0/  0(  0%)  2/  0(  0%)   8/  1( 11%)
 E052                   ABOVE/BELOW 4MG/L      2/  0(  0%)  4/  1( 20%)  0/  0(  0%)  2/  0(  0%)   8/  1( 11%)
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PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL          TOTAL

********** HIGH WATER LEVELS
 E045                             ABOVE/BELOW 2MG/L     2/  0(  0%)  0/  1(100%)  0/  0(  0%)  1/  0(  0%)  3/  1( 25%)
 E045                             ABOVE/BELOW 4MG/L     2/  0(  0%)  0/  1(100%)  0/  0(  0%)  1/  0(  0%)  3/  1( 25%)

**********  LOW WATER LEVELS
 E045                             ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E045                             ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  0/  1(100%)  1/  0(  0%)  1/  2( 66%)

**********  ALL WATER LEVELS
 E045                             ABOVE/BELOW 2MG/L     2/  0(  0%)  1/  1( 50%)  1/  0(  0%)  2/  0(  0%)  6/  1( 14%)
 E045                             ABOVE/BELOW 4MG/L     2/  0(  0%)  0/  2(100%)  0/  1(100%)  2/  0(  0%)  4/  3( 42%)

PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL          TOTAL

********** HIGH WATER LEVELS
 E046                             ABOVE/BELOW 2MG/L     2/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  4/  1( 20%)
 E046                             ABOVE/BELOW 4MG/L     2/  0(  0%)  0/  2(100%)  0/  0(  0%)  1/  0(  0%)  3/  2( 40%)

**********  LOW WATER LEVELS
 E046                             ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E046                             ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  0/  1(100%)  1/  0(  0%)  1/  2( 66%)

**********  ALL WATER LEVELS
 E046                             ABOVE/BELOW 2MG/L     2/  0(  0%)  2/  1( 33%)  1/  0(  0%)  2/  0(  0%)  7/  1( 12%)
 E046                             ABOVE/BELOW 4MG/L     2/  0(  0%)  0/  3(100%)  0/  1(100%)  2/  0(  0%)  4/  4( 50%)

PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL          TOTAL

********** HIGH WATER LEVELS
 E047                             ABOVE/BELOW 2MG/L     2/  0(  0%)  4/  0(  0%)  0/  0(  0%)  2/  0(  0%)  8/  0(  0%)
 E047                             ABOVE/BELOW 4MG/L     2/  0(  0%)  3/  1( 25%)  0/  0(  0%)  1/  1( 50%)  6/  2( 25%)

**********  LOW WATER LEVELS
 E047                             ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  2/  0(  0%)  1/  0(  0%)  4/  0(  0%)
 E047                             ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  1/  1( 50%)  1/  0(  0%)  2/  2( 50%)

**********  ALL WATER LEVELS
 E047                             ABOVE/BELOW 2MG/L     2/  0(  0%)  5/  0(  0%)  2/  0(  0%)  3/  0(  0%) 12/  0(  0%)
 E047                             ABOVE/BELOW 4MG/L     2/  0(  0%)  3/  2( 40%)  1/  1( 50%)  2/  1( 33%)  8/  4( 33%)

PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL          TOTAL

********** HIGH WATER LEVELS
 E048                             ABOVE/BELOW 2MG/L     2/  0(  0%)  4/  0(  0%)  0/  0(  0%)  2/  0(  0%)  8/  0(  0%)
 E048                             ABOVE/BELOW 4MG/L     2/  0(  0%)  4/  0(  0%)  0/  0(  0%)  2/  0(  0%)  8/  0(  0%)

**********  LOW WATER LEVELS
 E048                             ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E048                             ABOVE/BELOW 4MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E048                             ABOVE/BELOW 2MG/L     2/  0(  0%)  5/  0(  0%)  1/  0(  0%)  3/  0(  0%) 11/  0(  0%)
 E048                             ABOVE/BELOW 4MG/L     2/  0(  0%)  5/  0(  0%)  1/  0(  0%)  3/  0(  0%) 11/  0(  0%)
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PRIMARY STATION
                                                 WINTER      SPRING      SUMMER      FALL        TOTAL
********** HIGH WATER LEVELS
 F053                   ABOVE/BELOW 2MG/L     2/  0(  0%)  2/  1( 33%)  0/  0(  0%)  1/  0(  0%)  5/  1( 16%)
 E053                   ABOVE/BELOW 4MG/L     2/  0(  0%)  2/  1( 33%)  0/  0(  0%)  1/  0(  0%)  5/  1( 16%)

**********  LOW WATER LEVELS
 E053                   ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E053                   ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  0/  1(100%)  1/  0(  0%)  1/  2( 66%)

**********  ALL WATER LEVELS
 E053                   ABOVE/BELOW 2MG/L     2/  0(  0%)  3/  1( 25%)  1/  0(  0%)  2/  0(  0%)  8/  1( 11%)
 E053                   ABOVE/BELOW 4MG/L     2/  0(  0%)  2/  2( 50%)  0/  1(100%)  2/  0(  0%)  6/  3( 33%)

PRIMARY STATION
                                                 WINTER      SPRING      SUMMER      FALL        TOTAL
********** HIGH WATER LEVELS
 E054                   ABOVE/BELOW 2MG/L     2/  0(  0%)  2/  1( 33%)  0/  0(  0%)  1/  0(  0%)  5/  1( 16%)
 E054                   ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  2( 66%)  0/  0(  0%)  1/  0(  0%)  4/  2( 33%)

**********  LOW WATER LEVELS
 E054                   ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E054                   ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  0/  1(100%)  1/  0(  0%)  1/  2( 66%)

**********  ALL WATER LEVELS
 E054                   ABOVE/BELOW 2MG/L     2/  0(  0%)  3/  1( 25%)  1/  0(  0%)  2/  0(  0%)  8/  1( 11%)
 E054                   ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  3( 75%)  0/  1(100%)  2/  0(  0%)  5/  4( 44%)

PRIMARY STATION
                                                 WINTER      SPRING      SUMMER      FALL        TOTAL
********** HIGH WATER LEVELS
 E055                   ABOVE/BELOW 2MG/L     1/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  3/  1( 25%)
 E055                   ABOVE/BELOW 4MG/L     1/  0(  0%)  0/  2(100%)  0/  0(  0%)  1/  0(  0%)  2/  2( 50%)

**********  LOW WATER LEVELS
 E055                   ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E055                   ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  2/  1( 33%)

**********  ALL WATER LEVELS
 E055                   ABOVE/BELOW 2MG/L     1/  0(  0%)  2/  1( 33%)  1/  0(  0%)  2/  0(  0%)  6/  1( 14%)
 E055                   ABOVE/BELOW 4MG/L     1/  0(  0%)  0/  3(100%)  1/  0(  0%)  2/  0(  0%)  4/  3( 42%)

PRIMARY STATION
                                                 WINTER      SPRING      SUMMER      FALL        TOTAL
********** HIGH WATER LEVELS
 E056                   ABOVE/BELOW 2MG/L     2/  0(  0%)  3/  0(  0%)  0/  0(  0%)  1/  0(  0%)  6/  0(  0%)
 E056                   ABOVE/BELOW 4MG/L     2/  0(  0%)  2/  1( 33%)  0/  0(  0%)  1/  0(  0%)  5/  1( 16%)

**********  LOW WATER LEVELS
 E056                   ABOVE/BELOW 2MG/L     0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  2/  0(  0%)
 E056                   ABOVE/BELOW 4MG/L     0/  0(  0%)  0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  2/  0(  0%)

**********  ALL WATER LEVELS
 E056                   ABOVE/BELOW 2MG/L     2/  0(  0%)  3/  0(  0%)  1/  0(  0%)  2/  0(  0%)  8/  0(  0%)
 E056                   ABOVE/BELOW 4MG/L     2/  0(  0%)  2/  1( 33%)  1/  0(  0%)  2/  0(  0%)  7/  1( 12%)
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PRIMARY STATION
                                                   WINTER       SPRING       SUMMER       FALL         TOTAL
********** HIGH WATER LEVELS
 E057                       ABOVE/BELOW 2MG/L     2/  0(  0%)  2/  0(  0%)  0/  0(  0%)  1/  0(  0%)  5/  0(  0%)
 E057                       ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  4/  1( 20%)

**********  LOW WATER LEVELS
 E057                       ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E057                       ABOVE/BELOW 4MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E057                       ABOVE/BELOW 2MG/L     2/  0(  0%)  3/  0(  0%)  1/  0(  0%)  2/  0(  0%)  8/  0(  0%)
 E057                       ABOVE/BELOW 4MG/L     2/  0(  0%)  2/  1( 33%)  1/  0(  0%)  2/  0(  0%)  7/  1( 12%)

PRIMARY STATION
                                                   WINTER       SPRING       SUMMER       FALL         TOTAL
********** HIGH WATER LEVELS
 E058                       ABOVE/BELOW 2MG/L     2/  0(  0%)  2/  0(  0%)  0/  0(  0%)  1/  0(  0%)  5/  0(  0%)
 E058                       ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  1( 50%)  0/  0(  0%)  1/  0(  0%)  4/  1( 20%)

**********  LOW WATER LEVELS
 E058                       ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E058                       ABOVE/BELOW 4MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E058                       ABOVE/BELOW 2MG/L     2/  0(  0%)  3/  0(  0%)  1/  0(  0%)  2/  0(  0%)  8/  0(  0%)
 E058                       ABOVE/BELOW 4MG/L     2/  0(  0%)  2/  1( 33%)  1/  0(  0%)  2/  0(  0%)  7/  1( 12%)

PRIMARY STATION
                                                   WINTER       SPRING       SUMMER       FALL         TOTAL
********** HIGH WATER LEVELS
 E059                       ABOVE/BELOW 2MG/L     1/  0(  0%)  4/  0(  0%)  0/  0(  0%)  1/  0(  0%)  6/  0(  0%)
 E059                       ABOVE/BELOW 4MG/L     1/  0(  0%)  2/  2( 50%)  0/  0(  0%)  1/  0(  0%)  4/  2( 33%)

**********  LOW WATER LEVELS
 E059                       ABOVE/BELOW 2MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E059                       ABOVE/BELOW 4MG/L     0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E059                       ABOVE/BELOW 2MG/L     1/  0(  0%)  5/  0(  0%)  1/  0(  0%)  2/  0(  0%)  9/  0(  0%)
 E059                       ABOVE/BELOW 4MG/L     1/  0(  0%)  3/  2( 40%)  1/  0(  0%)  2/  0(  0%)  7/  2( 22%)

PRIMARY STATION
                                                   WINTER       SPRING       SUMMER       FALL         TOTAL
********** HIGH WATER LEVELS
 E060                       ABOVE/BELOW 2MG/L     2/  0(  0%)  5/  0(  0%)  1/  0(  0%)  1/  0(  0%)  9/  0(  0%)
 E060                       ABOVE/BELOW 4MG/L     2/  0(  0%)  5/  0(  0%)  1/  0(  0%)  1/  0(  0%)  9/  0(  0%)

**********  LOW WATER LEVELS
 E060                       ABOVE/BELOW 2MG/L     2/  0(  0%)  1/  0(  0%)  2/  0(  0%)  4/  0(  0%)  9/  0(  0%)
 E060                       ABOVE/BELOW 4MG/L     2/  0(  0%)  1/  0(  0%)  2/  0(  0%)  4/  0(  0%)  9/  0(  0%)

**********  ALL WATER LEVELS
 E060                       ABOVE/BELOW 2MG/L     4/  0(  0%)  6/  0(  0%)  3/  0(  0%)  5/  0(  0%) 10/  0(  0%)
 E060                       ABOVE/BELOW 4MG/L     4/  0(  0%)  6/  0(  0%)  3/  0(  0%)  5/  0(  0%) 10/  0(  0%)
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PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E061                        ABOVE/BELOW 2MG/L      0/  0(  0%)  2/  0(  0%)  0/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E061                        ABOVE/BELOW 4MG/L      0/  0(  0%)  2/  0(  0%)  0/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  LOW WATER LEVELS
 E061                        ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E061                        ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E061                        ABOVE/BELOW 2MG/L      0/  0(  0%)  3/  0(  0%)  1/  0(  0%)  2/  0(  0%)  6/  0(  0%)
 E061                        ABOVE/BELOW 4MG/L      0/  0(  0%)  3/  0(  0%)  1/  0(  0%)  2/  0(  0%)  6/  0(  0%)


PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E062                        ABOVE/BELOW 2MG/L      1/  0(  0%)  4/  0(  0%)  0/  0(  0%)  0/  0(  0%)  5/  0(  0%)
 E062                        ABOVE/BELOW 4MG/L      1/  0(  0%)  4/  0(  0%)  0/  0(  0%)  0/  0(  0%)  5/  0(  0%)

**********  LOW WATER LEVELS
 E062                        ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E062                        ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E062                        ABOVE/BELOW 2MG/L      1/  0(  0%)  5/  0(  0%)  1/  0(  0%)  1/  0(  0%)  8/  0(  0%)
 E062                        ABOVE/BELOW 4MG/L      1/  0(  0%)  5/  0(  0%)  1/  0(  0%)  1/  0(  0%)  8/  0(  0%)


PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E063                        ABOVE/BELOW 2MG/L      1/  0(  0%)  2/  1( 33%)  0/  0(  0%)  1/  0(  0%)  4/  1( 20%)
 E063                        ABOVE/BELOW 4MG/L      1/  0(  0%)  1/  2( 66%)  0/  0(  0%)  1/  0(  0%)  3/  2( 40%)

**********  LOW WATER LEVELS
 E063                        ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E063                        ABOVE/BELOW 4MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E063                        ABOVE/BELOW 2MG/L      1/  0(  0%)  3/  1( 25%)  1/  0(  0%)  2/  0(  0%)  7/  1( 12%)
 E063                        ABOVE/BELOW 4MG/L      1/  0(  0%)  2/  2( 50%)  1/  0(  0%)  2/  0(  0%)  6/  2( 25%)


PRIMARY STATION                                          WINTER       SPRING       SUMMER       FALL         TOTAL

********** HIGH WATER LEVELS
 E064                        ABOVE/BELOW 2MG/L      0/  0(  0%)  2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)
 E064                        ABOVE/BELOW 4MG/L      0/  0(  0%)  2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)

**********  LOW WATER LEVELS
 E064                        ABOVE/BELOW 2MG/L      0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E064                        ABOVE/BELOW 4MG/L      0/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  2/  1( 33%)

**********  ALL WATER LEVELS
 E064                        ABOVE/BELOW 2MG/L      0/  0(  0%)  3/  0(  0%)  1/  0(  0%)  1/  0(  0%)  5/  0(  0%)
 E064                        ABOVE/BELOW 4MG/L      0/  0(  0%)  2/  1( 33%)  1/  0(  0%)  1/  0(  0%)  4/  1( 20%)
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PRIMARY STATION

********** HIGH WATER LEVFLS                                   WINTER       SPRING       SUMMER       FALL         TOTAL
 E065
 E065                          ABOVE/BELOW 2MG/L            1/  0(  0%)  4/  0(  0%)  0/  0(  0%)  0/  0(  0%)  5/  0(  0%)
                               ABOVE/BELOW 4MG/L            1/  0(  0%)  3/  1( 25%)  0/  0(  0%)  0/  0(  0%)  4/  1( 20%)
**********  LOW WATER LEVELS
 E065
 E065                          ABOVE/BELOW 2MG/L            0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
                               ABOVE/BELOW 4MG/L            0/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  2/  1( 33%)
**********  ALL WATER LEVELS
 E065
 E065                          ABOVE/BELOW 2MG/L            1/  0(  0%)  5/  0(  0%)  1/  0(  0%)  1/  0(  0%)  8/  0(  0%)
                               ABOVE/BELOW 4MG/L            1/  0(  0%)  3/  2( 40%)  1/  0(  0%)  1/  0(  0%)  6/  2( 25%)

PRIMARY STATION

********** HIGH WATER LEVELS                                   WINTER       SPRING       SUMMER       FALL         TOTAL
 E066
 E066                          ABOVE/BELOW 2MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
                               ABOVE/BELOW 4MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
**********  LOW WATER LEVELS
 E066
 E066                          ABOVE/BELOW 2MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
                               ABOVE/BELOW 4MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
**********  ALL WATER LEVELS
 E066
 E066                          ABOVE/BELOW 2MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
                               ABOVE/BELOW 4MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

PRIMARY STATION

********** HIGH WATER LEVELS                                   WINTER       SPRING       SUMMER       FALL         TOTAL
 E067
 E067                          ABOVE/BELOW 2MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
                               ABOVE/BELOW 4MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
**********  LOW WATER LEVELS
 E067
 E067                          ABOVE/BELOW 2MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
                               ABOVE/BELOW 4MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
**********  ALL WATER LEVELS
 E067
 E067                          ABOVE/BELOW 2MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
                               ABOVE/BELOW 4MG/L            0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

PRIMARY STATION

********** HIGH WATER LEVELS                                   WINTER       SPRING       SUMMER       FALL         TOTAL
 E068
 E068                          ABOVE/BELOW 2MG/L            1/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)
                               ABOVE/BELOW 4MG/L            1/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)
**********  LOW WATER LEVELS
 E068
 E068                          ABOVE/BELOW 2MG/L            1/  0(  0%)  0/  1(100%)  1/  0(  0%)  3/  0(  0%)  5/  1( 16%)
                               ABOVE/BELOW 4MG/L            1/  0(  0%)  0/  1(100%)  1/  0(  0%)  3/  0(  0%)  5/  1( 16%)
**********  ALL WATER LEVELS
 E068
 E068                          ABOVE/BELOW 2MG/L            2/  0(  0%)  1/  1( 50%)  1/  0(  0%)  3/  0(  0%)  7/  1( 12%)
                               ABOVE/BELOW 4MG/L            2/  0(  0%)  1/  1( 50%)  1/  0(  0%)  3/  0(  0%)  7/  1( 12%)
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PRIMARY STATION                                        WINTER      SPRING      SUMMER      FALL         TOTAL

********** HIGH WATER LEVELS
 E069                          ABOVE/BELOW 2MG/L    1/  0(  0%)  3/  0(  0%)  0/  0(  0%)  0/  0(  0%)  4/  0(  0%)
 E069                          ABOVE/BELOW 4MG/L    1/  0(  0%)  3/  0(  0%)  0/  0(  0%)  0/  0(  0%)  4/  0(  0%)

**********  LOW WATER LEVELS
 E069                          ABOVE/BELOW 2MG/L    2/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  5/  0(  0%)
 E069                          ABOVE/BELOW 4MG/L    2/  0(  0%)  0/  1(100%)  1/  0(  0%)  1/  0(  0%)  4/  1( 20%)

**********  ALL WATER LEVELS
 E069                          ABOVE/BELOW 2MG/L    3/  0(  0%)  4/  0(  0%)  1/  0(  0%)  1/  0(  0%)  9/  0(  0%)
 E069                          ABOVE/BELOW 4MG/L    3/  0(  0%)  3/  1( 25%)  1/  0(  0%)  1/  0(  0%)  8/  1( 11%)


PRIMARY STATION                                        WINTER      SPRING      SUMMER      FALL         TOTAL

********** HIGH WATER LEVELS
 E070                          ABOVE/BELOW 2MG/L    0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)
 E070                          ABOVE/BELOW 4MG/L    0/  0(  0%)  1/  0(  0%)  0/  0(  0%)  0/  0(  0%)  1/  0(  0%)

**********  LOW WATER LEVELS
 E070                          ABOVE/BELOW 2MG/L    0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)
 E070                          ABOVE/BELOW 4MG/L    0/  0(  0%)  1/  0(  0%)  1/  0(  0%)  1/  0(  0%)  3/  0(  0%)

**********  ALL WATER LEVELS
 E070                          ABOVE/BELOW 2MG/L    0/  0(  0%)  2/  0(  0%)  1/  0(  0%)  1/  0(  0%)  4/  0(  0%)
 E070                          ABOVE/BELOW 4MG/L    0/  0(  0%)  2/  0(  0%)  1/  0(  0%)  1/  0(  0%)  4/  0(  0%)


PRIMARY STATION                                        WINTER      SPRING      SUMMER      FALL         TOTAL

********** HIGH WATER LEVELS
 E072                          ABOVE/BELOW 2MG/L    1/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  1/  1( 50%)
 E072                          ABOVE/BELOW 4MG/L    1/  0(  0%)  0/  1(100%)  0/  0(  0%)  0/  0(  0%)  1/  1( 50%)

**********  LOW WATER LEVELS
 E072                          ABOVE/BELOW 2MG/L    2/  0(  0%)  0/  1(100%)  0/  0(  0%)  3/  0(  0%)  5/  1( 16%)
 E072                          ABOVE/BELOW 4MG/L    2/  0(  0%)  0/  1(100%)  0/  0(  0%)  3/  0(  0%)  5/  1( 16%)

**********  ALL WATER LEVELS
 E072                          ABOVE/BELOW 2MG/L    3/  0(  0%)  0/  2(100%)  0/  0(  0%)  3/  0(  0%)  6/  2( 25%)
 E072                          ABOVE/BELOW 4MG/L    3/  0(  0%)  0/  2(100%)  0/  0(  0%)  3/  0(  0%)  6/  2( 25%)


PRIMARY STATION                                        WINTER      SPRING      SUMMER      FALL         TOTAL

********** HIGH WATER LEVELS
 E073                          ABOVE/BELOW 2MG/L    0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)
 E073                          ABOVE/BELOW 4MG/L    0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)  0/  0(  0%)

**********  LOW WATER LEVELS
 E073                          ABOVE/BELOW 2MG/L    2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)  4/  0(  0%)
 E073                          ABOVE/BELOW 4MG/L    1/  1( 50%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)  3/  1( 25%)

**********  ALL WATER LEVELS
 E073                          ABOVE/BELOW 2MG/L    2/  0(  0%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)  4/  0(  0%)
 E073                          ABOVE/BELOW 4MG/L    1/  1( 50%)  0/  0(  0%)  0/  0(  0%)  2/  0(  0%)  3/  1( 25%)
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PRIMARY STATION                                          WINTER          SPRING          SUMMER          FALL            TOTAL

********** HIGH WATER LEVELS
 E075                         ABOVE/BELOW 2MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)
 E075                         ABOVE/BELOW 4MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)

**********  LOW WATER LEVELS
 E075                         ABOVE/BELOW 2MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)
 E075                         ABOVE/BELOW 4MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)

**********  ALL WATER LEVELS
 E075                         ABOVE/BELOW 2MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)
 E075                         ABOVE/BELOW 4MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)

PRIMARY STATION                                          WINTER          SPRING          SUMMER          FALL            TOTAL

********** HIGH WATER LEVELS
 E076                         ABOVE/BELOW 2MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)
 E076                         ABOVE/BELOW 4MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)

**********  LOW WATER LEVELS
 E076                         ABOVE/BELOW 2MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)
 E076                         ABOVE/BELOW 4MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)

**********  ALL WATER LEVELS
 E076                         ABOVE/BELOW 2MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)
 E076                         ABOVE/BELOW 4MG/L     0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)   0/  0(  0%)
```

APPENDIX F. MEAN DISSOLVED OXYGEN CONCENTRATIONS FOR STATIONS LOCATED IN THE ATCHAFALAYA BASIN FLOODWAY

This appendix was generated by computer. Because of this it was necessary to print alphabetic characters in upper case. This appendix lists mean station DO observations in mg/l by date collected and season for the Atchafalaya Basin Floodway exclusive of Fordouche and its subareas: Buffalo Cove, Upper Flats, Upper Belle River, Grand Lake, and Fordouche. These areas of the Basin were selected because they are subjected to prolonged overbank flooding. The heading in capital letters designates the geographical areas, e.g., FORDOUCHE. Column 1 under the geographical area defines the station, column 2 lists the date the station was sampled, column 3 lists the season the station was sampled and column 4 presents the mean station DO concentrations in mg/l for the given date. Seasons are defined as 1 = winter (December 21 to March 20), 2 = spring (March 21 to June 20), 3 = summer (June 21 to September 20), and 4 = fall (September 21 to December 20).

```
    WEST ATCHAFALAYA FLOODWAY
C001      741118      4        3.3000
C001      741209      4        5,6000
C001      750114      1        5,6500
C001      750414      2        5,0000
C001      750610      2        2,7125
C001      751217      4        6,9333
C001      760322      2        5,9333
C001      760603      2        3,4667
C001      760928      4        5,6000
C001      770324      2        2,1333
C002      741118      4        2,6000
C002      741209      4        4,0000
C002      750114      1        4,2000
C002      751217      4        5,7000
C002      760322      2        3,4000
C002      760728      3        3,7200
C002      761109      4        5,0000
C003      741118      4        3,6000
C003      741209      4        6,0000
C003      750115      1        7,1000
C003      760322      2        4,8000
C003      760728      3        4,5200
C004      741119      4        3,8667
C004      741209      4        5,8000
C004      750115      1        5,8667
C004      750414      2        3,4000
C004      750611      2        1,9667
C004      751217      4        5,6000
C004      760322      2        5,2000
C004      760604      2        1,2000
C004      760701      3        3,0667
C004      760728      3        3,8000
C004      760901      3        5,1333
C004      760930      4        2,4200
C004      761109      4        8,9000
C004      770324      2        3,4667
C005      741119      4        7,6000
C005      741209      4        9,5000
C005      750115      1        9,8000
C005      750414      2        9,8000
C005      751217      4        7,6000
C005      760322      2        8,4000
C005      760604      2        4,4000
C005      760611      2        2,8000
C005      760728      3       10,7600
C007      760901      3        3,9000
C007      761129      4        8,2000
C007      761229      1        6,0000
C007      770117      1        9,0000
C007      770419      2        2,4000
C007      770524      2        3,0000
C008      760701      3        4,6000
C008      760901      3        8,6000
C008      761109      4        7,8000
C008      761129      4        8,66667
C008      761230      1        6,93333
C008      770117      1        8,80000
C008      770419      2        2,80000
        MORGANZA FLOODWAY
D001      741118      4        5,3000
D001      741209      4        6,1333
D001      750114      1        7,1333
D001      750414      2        7,8000
D001      750610      2        7,0000
D001      760322      2        5,8667
D001      760603      2        4,2000
D001      760728      3        2,5400
D001      761208      4       11,6000
D001      770324      2        7,2000
```

```
                FORDOUCHE
E001        740319          1          2,40000
E001        740528          2          2,20000
E001        740822          3          4,00000
E001        741115          4          6,60000
E001        741209          4          6,20000
E001        750115          1          5,70000
E001        750414          2          4,40000
E001        750611          2          2,00000
E001        751215          4          6,60000
E001        760322          2          5,50000
E001        760604          2          2,20000
E001        760729          3          4,36000
E001        761109          4          8,80000
E001        770324          2          3,40000
E002        740319          1          4,00000
E002        740528          2          3,50000
E002        740822          3          1,20000
E002        741115          4          5,40000
E002        741209          4          6,60000
E002        750115          1          7,00000
E002        750611          2          2,80000
E002        751215          4          6,50000
E002        760322          2          6,26667
E002        760604          2          1,40000
E002        760901          3          5,90000
E002        760929          4          2,65333
E002        760930          4          5,25000
E002        761129          4          7,80000
E002        761230          1          7,60000
E002        770117          1          9,00000
E002        770324          2          4,53333
E002        770419          2          2,53333
E002        770524          2          4,13333
E003        741119          4          3,00000
E003        741209          4          5,66667
E003        750115          1          5,20000
E003        750611          2          0,86667
E003        751215          4          6,90000
E003        760322          2          5,20000
E003        760604          2          2,40000
E003        760729          3          2,18667
E003        761111          4          6,10000
E003        770316          1          6,96667
E003        770324          2          2,86667
E004        741119          4          1,00000
E004        750122          1          4,00000
E004        750417          2          1,90000
E004        750611          2          6,36667
E004        751215          4          5,66667
E004        760323          2          1,26667
E004        760604          2          0,53333
E004        760728          3          2,80000
E004        761111          4          7,80000
E004        770324          2          1,33333
E005        741119          4           1,6000
E005        750122          1           2,6000
E005        750612          2           1,7000
E005        751215          4           8,0000
E005        760323          2           4,2000
E005        760729          3           2,7200
E005        770324          2           4,0000
E006        741119          4           6,8000
E006        750123          1           4,8000
E006        750417          2           6,9000
E006        750612          2           3,5000
E006        751215          4           7,5000
E006        760323          2           3,4667
E006        760604          2           0,4000
E006        760729          3           2,7600
E006        761111          4           6,8000
```

E006	770324	2	4.4000
E007	750123	1	4.2000
E007	751215	4	6.6000
E007	760322	2	6.4000
E007	760604	2	1.6000
E007	760729	3	3.2000
E007	770324	2	3.4000
E008	740319	1	4.4000
E008	740528	2	2.9000
E008	740822	3	3.5333
E008	741115	4	7.8000
E008	750123	1	5.0000
E008	750417	2	7.5333
E008	750612	2	2.1000
E008	760322	2	7.8000
E008	760604	2	3.6000
E008	760713	3	3.4667
E008	760729	3	3.9600
E008	760914	3	4.8667
E008	760923	4	5.9333
E008	761019	4	7.7250
E008	761201	4	9.0567
E008	770216	1	6.2667
E008	770309	1	5.3333
E008	770325	2	5.4000
E009	741119	4	7.0667
E009	750123	1	3.7000
E009	750612	2	0.2750
E009	751215	4	8.0667
E009	760323	2	6.6667
E009	760604	2	3.6000
E009	760729	3	3.8000
E009	761111	4	6.7333
E009	770117	1	11.2000
E009	770124	1	8.2000
E009	770325	2	3.0000
E010	741119	4	6.3000
E010	750123	1	5.0000
E010	750417	2	2.8000
E010	751215	4	7.9000
E010	760325	2	5.0000
E010	760604	2	2.8000
E010	760729	3	2.6400
E010	770325	2	2.5000
E011	741119	4	7.2000
E011	750123	1	6.0667
E011	750612	2	1.1000
E011	751215	4	10.5000
E011	760325	2	7.7333
E011	760604	2	4.0000
E011	760729	3	4.2800
E011	760914	3	3.6000
E011	761026	4	8.9000
E011	761076	4	5.4000
E011	761111	4	6.6000
E011	761201	4	8.5200
E011	761215	4	8.4167
E011	770124	1	8.9333
E011	770309	1	7.2000
E011	770325	2	5.5333
E011	770420	2	6.9333
E011	770525	2	2.9333
E012	750123	1	7.3000
E012	751215	4	7.4000
E012	760323	2	9.1000
E012	760604	2	5.2000
E012	760729	3	5.3200
E012	770325	2	6.8000
E066	760929	4	1.8000

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  E067      760729      3        2,8600
  E072      760701      1        5,2000
  E072      761026      4        7,1333
  E072      761201      4        8,4000
  E072      761215      4        6,0633
  E072      770124      1        7,8667
  E072      770216      1        4,8000
  E072      770309      1        4,9333
  E072      770420      2        1,6000
  E072      770525      2        0,6667
  E073      760914      3        4,6000
  E073      761019      4        8,2000
  E073      761216      4        9,0250
  E073      770124      1        6,6667
  E073      770216      1        3,7333
ATCHAF BASIN FLDWY LESS FORDOUCHE
  E013      741119      4        4,3000
  E013      750115      1        5,7000
  E013      750417      2        5,8500
  E013      750611      2        1,4500
  E013      751217      4        6,8000
  E013      760323      2        4,6000
  E013      760603      2        2,1000
  E013      760729      3        4,3000
  E013      761111      4        4,8667
  E013      770324      2        3,1333
  E014      750123      1        8,0000
  E014      751210      4       10,5200
  E014      760325      2        6,8000
  E014      760604      2        7,0667
  E014      760802      3        6,8667
  E014      770325      2        2,8000
  E015      741119      4        6,0000
  E015      750123      1        5,4000
  E015      750612      2        1,1000
  E015      751210      4        9,6000
  E015      760323      2        5,2000
  E015      760804      3        8,8000
  E015      770325      2        2,4000
  E016      741120      4        4,3000
  E016      750123      1        5,0000
  E016      750612      2        0,7000
  E016      751210      4        9,0000
  E016      760325      2        5,2000
  E016      760608      2        6,4000
  E016      760804      3        7,2000
  E016      770325      2        3,0000
  E017      741120      4        4,3000
  E017      750123      1        5,3000
  E017      750612      2        2,5000
  E017      760326      2        6,0000
  E017      760608      2        6,0000
  E017      770325      2        6,2000
  E018      750123      1        6,2667
  E018      751210      4        8,2000
  E018      760325      2        4,4500
  E018      760608      2        1,6000
  E018      760804      3        7,0000
  E018      770325      2        2,6000
  E019      740319      1        4,5000
  E019      740528      2        2,0000
  E019      740822      3        1,1500
  E019      741115      4        6,6667
  E019      750123      1        5,8000
  E019      750417      2        7,0000
  E019      750612      2        2,3000
  E019      751210      4        8,9000
  E019      760325      2        4,8000
  E019      760608      2        2,0000
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E019      760804      3       6,0000
E019      770325      2       3,3000
E020      740319      1       7,4000
E020      740528      2       5,0000
E020      740821      3       7,4000
E020      741115      4       7,8000
E020      750116      1       7,0000
E020      750416      2       7,1333
E020      750612      2       5,3000
E020      760326      2       4,0000
E020      760605      2       5,2000
E020      760802      3       6,0000
E020      761112      4      11,4000
E020      770326      2       2,2000
E021      741120      4       1,4000
E021      750116      1       2,9333
E021      751212      4       4,7000
E021      760326      2       3,4667
E021      760802      3       2,5500
E021      770326      2       1,6000
E022      760802      3       1,8500
E023      760802      3       4,1000
E023      761112      4       8,4000
E023      770326      2       8,1000
E024      760505      2       7,8667
E024      760802      3       2,4000
E024      760902      3      11,0000
E024      761026      4       7,3000
E024      761112      4       5,4000
E024      761216      4       9,1000
E024      770125      1      12,0000
E024      770217      1       6,0000
E024      770316      1       7,3333
E024      770328      2       2,0000
E024      770421      2       7,0667
E024      770526      2       1,2000
E025      760714      3       3,0000
E025      760802      3       2,2000
E025      761112      4       7,6000
E025      761202      4       9,8000
E025      770308      1       2,6333
E025      770328      2       1,8667
E026      760802      3       2,7000
E026      770308      1       0,7333
E026      770315      1       4,6667
E026      770316      1       4,1000
E026      770317      1       1,5000
E026      770328      2       2,4000
E027      761112      4       9,0000
E027      770316      1       6,0000
E027      770317      1       2,6667
E027      770328      2       2,0000
E028      760802      3       5,0500
E028      770217      1       7,6000
E028      770315      1       3,6000
E028      770316      1       2,1333
E028      770317      1       1,2000
E028      770328      2       4.2000
E029      760802      3       7,3667
E029      761112      4      10,0000
E029      770328      2       6,5333
E030      760505      2       7,5000
E030      760802      3       6,8000
E030      760902      3       9,2000
E030      761026      4       7,3500
E030      761202      4      10,5000
E030      761216      4       6,9333
E030      770125      1       9,6333
E030      770217      1       8,4000
E030      770316      1       7,0667
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E030     770326     2      7,2000
E030     770421     2      7,1333
E030     770526     2      1,6000
E031     760802     3      2,0000
E031     770125     1      6,6000
E031     770209     1      5,2500
E031     770308     1      7,4833
E031     770326     2      1,8000
E032     760104     1      8,3500
E032     760506     2      6,8000
E032     760605     2      0,8000
E032     760714     3      6,0000
E032     760802     3      2,6000
E032     761105     4     11,2000
E032     770125     1      7,9375
E032     770217     1      6,8000
E032     770308     1      7,3500
E032     770315     1      6,6667
E032     770316     1      5,8000
E032     770317     1      6,1333
E032     770326     2      3,2000
E033     741120     4      1,8000
E033     750120     1      8,1000
E033     750613     2      1,7000
E033     751212     4      8,0000
E033     760323     2      2,0000
E034     741120     4      3,4000
E034     750120     1      8,6000
E034     750613     2      3,4000
E034     751212     4      8,0000
E034     751218     4      8,0000
E034     760326     2      2,5333
E034     760605     2      3,6000
E034     760803     3      3,7400
E034     761115     4      8,2000
E034     770326     2      4,1333
E035     741120     4      5,2000
E035     750120     1     10,0000
E035     750416     2      7,9333
E035     750613     2      4,0500
E035     760326     2      3,2000
E035     760605     2      6,4000
E035     760803     3      4,4000
E035     761115     4     11,2000
E036     741121     4      7,6000
E036     750121     1      8,0000
E036     750416     2      8,0000
E036     751217     4      8,4000
E036     760106     1     12,4000
E036     760326     2      6,2000
E036     760607     2      4,8000
E036     760802     3      6,0000
E036     761115     4     10,0000
E036     770328     2      6,4000
E037     750121     1      8,8000
E037     751217     4     10,2000
E037     760326     2      9,6000
E037     760607     2      6,2400
E037     760803     3      6,6933
E037     761115     4     10,1333
E037     770328     2      7,2000
E038     750120     1      8,0000
E038     750418     2      7,8000
E038     751215     4     10,2000
E038     751219     4     10,0000
E038     760329     2      7,4000
E038     760607     2      6,8000
E038     760803     3      7,4000
E038     761115     4      9,6000
E038     770330     2      8,0000
```

E039	750118	1	7.8000
E039	751216	4	10.2000
E039	760122	1	12.0000
E039	760329	2	6.4667
E039	760608	2	6.8333
E039	760730	3	6.1333
E039	761112	4	10.0000
E039	770330	2	5.5333
E040	740319	1	4.2000
E040	740529	2	3.4000
E040	740821	3	8.2000
E040	760803	3	1.6000
E041	741121	4	1.6000
E041	750131	1	3.8000
E041	750418	2	6.8667
E041	751216	4	4.6000
E041	760106	1	6.3800
E041	760331	2	1.8000
E041	760607	2	1.4000
E041	760803	3	3.0950
E041	761115	4	9.2000
E041	770330	2	1.0000
E042	740320	1	3.8000
E042	740529	2	1.20000
E042	750121	1	8.13333
E042	751216	4	7.90000
E042	760106	1	5.92000
E042	760331	2	4.13333
E042	760607	2	2.60000
E042	760803	3	4.10000
E042	761115	4	8.00000
E042	770330	2	0.36667
E043	740319	1	2.50000
E043	740529	2	1.40000
E043	740821	3	3.90000
E043	741115	4	5.00000
E043	750121	1	5.26667
E043	750416	2	6.66667
E043	751216	4	8.70000
E043	760106	1	7.65000
E043	760115	1	9.00000
E043	760331	2	1.46667
E043	760607	2	2.60000
E043	760803	3	3.20000
E044	741121	4	1.00000
E044	750121	1	6.93333
E044	750418	2	6.46667
E044	751216	4	8.00000
E044	760105	1	4.60000
E044	760331	2	1.60000
E044	760607	2	2.40000
E044	760803	3	4.18000
E044	761115	4	6.80000
E045	741121	4	1.60000
E045	750121	1	6.80000
E045	751216	4	8.60000
E045	760106	1	6.87500
E045	760331	2	1.86667
E045	760607	2	2.53333
E045	760803	3	2.84000
E045	761115	4	7.40000
E046	741121	4	2.60000
E046	750121	1	7.40000
E046	751216	4	8.40000
E046	760106	1	8.92500
E046	760331	2	2.80000
E046	760607	2	3.40000
E046	760803	3	2.86667
E046	761115	4	9.06667
E046	770328	2	0.80000

```
E047        740320        1        6,50000
E047        740329        2        3,46667
E047        740821        3        4,00000
E047        741115        4        3,66667
E047        750121        1        7,73333
E047        750416        2        7,90000
E047        751216        4        7,13333
E047        760106        1         8,8000
E047        760329        2         5,7667
E047        760607        2         3,4667
E047        760803        3         2,9433
E047        761115        4         8,9000
E047        770328        2         4,6667
E048        740320        1         7,7000
E048        740529        2         6,0000
E048        741115        4         6,6000
E048        750120        1        10,4000
E048        750419        2         7,5000
E048        751215        4         8,9333
E048        760107        1        10,7500
E048        760329        2         7,8667
E048        760607        2         5,1500
E048        760803        3         4,8000
F048        761115        4         9,8000
E048        770330        2         7,2000
E049        750120        1         9,8000
E049        750418        2         7,8000
E049        751215        4        10,0000
E049        760329        2         8,0000
E049        760607        2         5,6000
E049        760803        3         5,2000
E049        761115        4         9,6000
E049        770330        2         6,6000
E050        740321        2         5,0000
E050        740528        2         3,0000
E050        741114        4         4,4000
E050        750120        1         7,8000
E050        750418        2         7,8000
E050        751215        4         7,2000
E050        760108        1        11,4500
E050        760329        2         6,4000
E050        760607        2         7,0000
E050        760803        3         4,5000
E050        761115        4         8,1000
E050        770330        2         2,3333
E051        740321        2         6,2000
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E051        741114        4         7,0000
E051        750118        1         8,8000
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E051        750614        2         5,4000
E051        760107        1         9,6750
E051        760329        2         6,5333
E051        760607        2         6,7000
E051        760803        3         7,6000
E051        761115        4        10,4000
E051        770330        2         3,4000
E052        741121        4         3,6000
E052        750120        1         8,5333
E052        750419        2         7,8000
E052        751215        4         8,3000
E052        760107        1         7,2700
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E052        760608        2         4,2000
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E052        770330        2         1,4667
E053        741122        4         3,2000
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E053        750418        2         7,6667
E053        751216        4         8,4000
E053        760107        1         8.6800
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E053	760607	2	3,7000
E053	760809	3	3,8000
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E053	770330	2	1,0667
E054	741122	4	4,4667
E054	750107	1	9,1800
E054	750120	1	7,0000
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E054	751216	4	7,5000
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E054	760607	2	3,8667
E054	760804	3	3,6667
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E056	750418	2	6,2667
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E056	760804	3	10,8000
E056	761115	4	10,4000
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E061	770328	2	6,1333
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E068	761202	4	9,0000
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E068	770427	2	7,6000
E068	770526	2	1,2000
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E069	770316	1	5,4667
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E070	760608	2	5,6000
E070	760729	3	8,1200

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E070       770325        2          9,6000
E075       770309        1          3,8000
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E015       751210        4          9,60000
F015       760323        2          5,20000
E015       760804        3          8,80000
E015       770325        2          2,40000
E016       741120        4          4,30000
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E016       750612        2          0,70000
E016       751210        4          9,00000
E016       760325        2          5,20000
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E016       760804        3          7,20000
E016       770325        2          3,00000
E017       741120        4          4,30000
E017       750123        1          5,30000
E017       750612        2          2,50000
E017       760326        2          6,00000
E017       760608        2          6,00000
E017       770325        2          6,20000
E018       750123        1          6,26667
E018       751210        4          8,20000
E018       760325        2          4,45000
E018       760608        2          1,60000
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E018       770325        2          2,60000
E019       740319        1          4,50000
E019       740528        2          2,00000
E019       740822        3          1,15000
E019       741115        4          6,66667
E019       750123        1          5,80000
E019       750417        2          7,00000
E019       750612        2          2,30000
E019       751210        4          8,90000
E019       760325        2          4,80000
E019       760608        2          2,00000
E019       760804        3          6,00000
E019       770328        2          3,30000
           BUFFALO COVE
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E020       740528        2          5,0000
E020       740821        3          7,4000
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E020       750116        1          7,0000
E020       750416        2          7,1333
E020       750612        2          5,3000
E020       760326        2          4,0000
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E020       760802        3          6,0000
E020       761112        4         11,4000
E020       770326        2          2,2000
E021       741120        4          1,4000
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E021       751212        4          4,7000
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E021       760802        3          2,8500
E021       770326        2          1,6000
E022       760802        3          1,8500
E023       760802        3          4,1000
E023       761112        4          8,4000
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E024       760505        2          7,8667
E024       760802        3          2,4000
E024       760902        3         11,0000
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E024	761216	4	9.1000
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E024	770316	1	7.3333
E024	770328	2	2.0000
E024	770421	2	7.0667
E024	770526	2	1.2000
E025	760714	3	3.0000
E025	760802	3	2.2000
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E025	761202	4	9.8000
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E025	770328	2	1.8667
E026	760802	3	2.7000
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E026	770315	1	4.6667
E026	770316	1	4.1000
E026	770317	1	1.5000
E026	770328	2	2.4000
E027	761112	4	9.0000
E027	770316	1	6.0000
E027	770317	1	2.6667
E027	770328	2	2.0000
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E028	770217	1	7.6000
E028	770315	1	3.6000
E028	770316	1	2.1333
E028	770317	1	1.2000
E028	770328	2	4.2000
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E030	760802	3	6.8000
E030	760902	3	9.2000
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E030	761216	4	6.9333
E030	770125	1	9.6333
E030	770217	1	8.4000
E030	770316	1	7.0667
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E030	770421	2	7.1333
E030	770526	2	1.6000
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E031	770209	1	5.2500
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E031	770326	2	1.8000
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E032	760605	2	0.8000
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E032	770326	2	3.2000
E033	741120	4	1.8000
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E033	750613	2	1.7000
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E034	750120	1	8.6000
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E035      760326        2         3,2000
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E068      760902        3         9,2
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E068      761202        4         9,0
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E068      770125        1         8,7
E068      770316        1         7,2
E068      770427        2         7,6
E068      770526        2         1,2
          UPPER BELLE RIVER
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 E041      750131        1          3,80000
 E041      750418        2          6,86667
 E041      751216        4          4,60000
 E041      760106        1          6,35000
 E041      760331        2          1,80000
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 E041      760803        3          3,09500
 E041      761115        4          9,20000
 E041      770330        2          1,00000
 E042      740320        1          3,80000
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 E042      751216        4          7,90000
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 E042      761115        4          8,00000
 E042      770330        2          0,36667
 E043      740319        1          2,50000
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 E043      750416        2          6,66667
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 E043      760106        1          7,65000
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 E043      760331        2          1,46667
 E043      760607        2          2,60000
 E043      760803        3          3,20000
 E044      741121        4          1,00000
 E044      750121        1          6,93333
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 E044      751216        4          8,00000
 E044      760105        1          4,60000
 E044      760331        2          1,60000
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 E044      761115        4          6,80000
 E045      741121        4          1,60000
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E045	760607	2	2,53333
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E046	741121	4	2,60000
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E046	760607	2	3,4000
E046	760803	3	2,8667
E046	761115	4	9,0667
E046	770328	2	0,8000
E047	740320	1	6,5000
E047	740329	2	3,4667
E047	740821	3	4,0000
E047	741115	4	3,6667
E047	750121	1	7,7333
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E047	751216	4	7,1333
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E048	740320	1	7,7000
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E048	760107	1	10,7500
E048	760329	2	7,8667
E048	760607	2	5,1500
E048	760803	3	4,8000
E048	761115	4	9,8000
E048	770330	2	7,2000
E049	750120	1	9,8000
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E049	760803	3	5,2000
E049	761115	4	9,6000
E049	770330	2	6,6000
E050	740321	2	5,0000
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E050	741114	4	4,4000
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E050	751215	4	7,2000
E050	760108	1	11,4500
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E050	760803	3	4,5000
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E050	770330	2	2,3333
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E051	761115	4	10,4000
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E054     741122     4      4.4667
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E057     741122     4      0.8000
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E058     760329     2      2.8667
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E058     761115     4      9.5000
E063     741211     4      5.6000
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E036        761115       4         10,0000
E036        770328       2          6,4000
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